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Development and validation of an instrument to measure future activism.

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DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE FUTURE ACTIVISM

A Dissertation Presented

By

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ABSTRACT

Development and Validation of an Instrument
to Measure Future Activism

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An instrument, the Future Orientations Questionnaire, was constructed to assess individual and group differences as well as changes over time with respect to a construct labeled future activism. This construct was defined as an individual's propensity to think and act in anticipation of, and with the intention of influencing, future events. Future time perspective and internal/external locus of control were identified as related constructs, but existing theoretical frameworks and instruments available in these two areas of study were shown to be inappropriate or inadequate in reference to the proposed construct.

Future activism was assumed to be a multi-dimensional construct. Through an iterative process of instrument development, 12 scales were identified. There is some empirical support for presenting the scales in terms of four groups: Group 1 ("Anticipation")--future orientation, planfulness, and option-seeking behavior; Group 2 ("Control")--internal control of societal and of personal future events, belief that powerful others control future outcomes; Group 3 ("Avoidance")--

luck/chance, fate/destiny, random/unpredictable/unknowable, and future acceptance; and Group 4 (Apprehension")--concern and future anxiety. The final instrument consists of 56 items, each uniquely assigned to one of the scales, and six filler items. All items are in a five- point Likert scale format.

Scale test-retest reliabilities at a one-week interval, for 46 psychology undergraduates, were in the range .71 to .90. Cronbach alpha coefficients of internal consistency were calculated for three samples: 246 psychology undergraduates, 66 participants in a conference on the future and education, and 40 participants in an Alumni Conference of a School of Education. Alphas for eight of the scales were in the range .70 to .90; the other four scales (option-seeking behavior, internal control of societal events, future-acceptance, and concern) showed weaker internal consistency.

Construct validity was assessed primarily by examining hypothesized relationships of convergence and divergence between the 12 Future Orientations Questionnaire scales and 11 scales of five previously published instruments. Rotter's Internal/External Locus of Control scale and Taylor's Manifest Anxiety Scale were administered to the 246 psychology undergraduates; Calabresi and Cohen's Time Attitude Scales, Clifton's Planning Intentions scale, and Heimberg's Future Time Perspective Inventory were administered to the 40 Alumni Conference participants. Most of the expected relationships were confirmed. Unexpected convergence was more common than unexpected

divergence, and was interpretable in terms of either domain overlap, logical consistencies identified post facto, or consistencies in broader patterns of correlations.

A criterion-related approach to validation was also utilized, with attendance at a conference on the subject of the future as the criterion behavior. Differences between the futures conference group and the alumni conference group were in the expected direction and were significant for three of the scales.

Further validation is needed, and recommendations are made in this regard. However, the instrument shows considerable potential as a tool for educational diagnosis and evaluation, and for educational and psychological research. The findings of this study indicate that the instrument is appropriate for use in situations involving group data and certain non-sensitive individual applications. Suggestions for further research are presented.

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CHAPTER I

PROBLEM STATEMENT AND RATIONALE FOR THE STUDY

Introduction

During the last few decades, an increasing number of educators have come to the opinion that today's students will confront, during their lifetimes, rapid social and technological change accompanied by complex and significant societal and global problems. Many such educators consider existing educational programs inadequate preparation for those prospects, and have established new educational objectives and activities, either within existing curriculum areas or under the new heading of future studies.

The educational objectives generated encompass a wide range of knowledge, skills, and attitudes. Illustrations of relevant topics include:

- an understanding of existing and prospective technologies for providing food throughout the world, trends in food production and consumption, and potential problems and solutions in the food system;
- an understanding of the concept of exponential growth and its application in such fields as population forecasting or projections of resource consumption;
- an ability to anticipate possible consequences of actions (both individual and collective);

- an ability to generate possible solutions to problems and to select among them.

If there is a common element within the future-oriented curricula, it is probably a concern that students develop the propensity not only to think about the future, but to think rationally and creatively about it--to identify possible courses of action and develop plans. In keeping with this concern, many educators would hope to see their students act with a realistic optimism about their abilty to influence future outcomes in ways which are favorable to them personally, to their community and society, and to humanity generally. These tendencies, taken together, represent an orientation which might be labeled future activism.

Statement of the Problem

The objectives of this study were to identify variables which are components or correlates of future activism and to develop and validate an instrument to measure those variables.

Future activism is defined as an individual's propensity to think and act in anticipation of and with the intention of influencing future events. "Future" refers, of course, to the span of time beginning immediately after the present moment and extending for a presumably infinite duration in the forward direction. For the purposes of this study, the zone of greatest interest extends from five years to perhaps one hundred years from now. Thought about the future is not limited to that which will be; it can include consideration of that which is

possible, most likely, and most desirable. Thought and action "in anticipation of and with the intention of influencing future events" can take place at the present moment, or at any moment (past or future) which is in advance of the relevant "future events."

Although future activitism is a major goal of numerous future-oriented educational programs, the concept has not been adequately defined or developed in the existing literature, nor has it been operationalized in the form of a measurement tool. Without a validated concept or a sound instrument, it is unnecessarily difficult for educators to specify future activism as an objective and assess its presence or absence. Similarly, it is impossible for researchers to evaluate developmental and educational influences on future activism, or to establish its relationship with other traits. Thus the need exists for such a concept and such an instrument; it is the purpose of this study to fulfill that need.

The instrument was designed to fulfill the following criteria: it should be a self-administering questionnaire which will reliably and sensitively indicate individual and group differences in specific variables associated with future activism. Scales measuring these specific variables should bear a logical relationship to future activism as defined above; tendencies to direct one's attention toward the future, to think rationally and creatively about it, to plan for it, and to act with the belief that one's actions can influence future outcomes in a favorable direction are possible examples. The instrument should consist of the smallest number of scales that adequately reflects the

richness of the concept. It was anticipated that the concept is multidimensional; consequently, relatively independent component concepts (scales) were sought. Construct validity was assessed according to generally accepted procedures, including the practical criterion of comparison between known groups which have and which have not demonstrated overt behavior consistent with the "future activism" concept.

Significance of the Problem

The past two or three decades have been a time of increasing interest in and concern about the future. Alvin Toffler popularized this concern with his best-selling book, Future Shock (1970), but the upsurge in systematic and scholarly thought about the future had begun years before. Fred Polak's The Image of the Future first appeared in Dutch in 1954, and his Prognostics: A Science in the Making Surveys the Future in 1969. Bertrand de Jouvenel's periodical, Futuribles, first appeared in Paris in the 1950s; his book, The Art of Conjecture, was published in English in 1967. The World Future Society was founded in 1966 as a "forum and clearinghouse for scientific and scholarly forecasts, investigations, and intellectual explorations of the future" (Spekke, 1975, p. vii). The existence of numerous other organizations, professional associations, and research institutes provides some indication of the significance of future studies as an intellectual enterprise (Cornish, 1977, p. 11 ff.).

This interest in the future is justified on various grounds. De Jouvenel begins The Art of Conjecture (1967, p. 3) by pointing out that

"With regard to the past, man can exert his will only in vain; his liberty is void, his power nonexistent." By contast, "the future is our only field of power, for we can act only on the future" (p. 5). Kenneth Boulding makes a similar assertion in his foreword to Polak's The Image of the Future (1973, p. v): ". . . whereas all experiences are of the past, all decisions are about the future. It is the great task of human knowledge to bridge this gap . . . ."

Other authors justify their investment in thought about the future by identifying possible social and economic transitions of the coming decades which may be more dramatic than any since the industrial revolution, and which would be less disruptive if they were addressed through foresightful planning and policies. There are many versions of the nature of these transitions, such as the post-industrial society, marked by the advent of the service economy (Bell, 1973), and the information or communications age, marked by automated transmittal and retrieval of data and electronic control of manufacturing processes (Dolotta, et al., 1976). The visions are sometimes contradictory: we may be on the verge of an era of abundance (Kahn, et al., 1976) or of increasing scarcity caused by the depletion or exhaustion of seemingly essential raw materials (Meadows, et al., 1972).

Some authors foresee an era not only of transition, but of crisis and discontinuity (Drucker, 1969; Eckholm, 1976; Toffler, 1975; Ferguson, 1979). Crisis may arise through the continuation of long-term trends--such as world population growth, or environmental pollution brought on by industrialization--which surpass some limit, such as

available food or the human organism's tolerance to toxins, and produce tragic results. Alternatively, crises might arise through sudden and unprecedented events--perhaps the low-probability, high impact events to which complex societies seem increasingly susceptible, such as the power blackout in New York City in 1967. Toffler's central thesis in Future Shock (1970) was that an increasing rate of change represents in itself a psychological challenge which may reach crisis proportions. Others speak of a crisis of crises--a piling up of one situation upon another to the extent that the normal channels for social and economic decision making are overburdened and the new realities are met, if at all, with ad hoc solutions and decision-making processes which may very well provide inadequate. It was this possible compounding of crises that United Nation's Secretary-General U Thant apparently had in mind in 1969 when he wrote,

> I do not wish to seem overdramatic, but I can only conclude from the information that is available to me as Secretary-General, that the Members of the United Nations have perhaps ten years left in which to subordinate their ancient quarrels and launch a global partnership to curb the arms race, to improve the human environment, to defuse the population explosion, and to supply the required momentum to development efforts. If such a global partnership is not forged within the next decade, then I very much fear that the problems I have mentioned will have reached such staggering proportions that they will be beyond our capacity to control. (quoted by Meadows, et al., 1972, p. 17.)

Although there is little indication that such a global partnership now exists, the problems referred to have not yet led to the catastrophic results U Thant anticipated. However, a considerable number of more recent writings reflect a continued concern with the same issues and

their possible implications (e.g., Fuller, 1981; Gribbin, 1979; Servan-Schreiber, 1980; Stokes, 1980).

Educators attempting to address these concerns take a variety of approaches. For some, the challenge is to bridge the gap between knowledge (which is rooted in the past) and action (which is directed toward influencing the future). In this sense, any learning in which learners actively utilize or rehearse skills and procedures, and apply facts and concepts to the selection of appropriate courses of action, is somewhat "futuristic." However, most of the self-consciously futuristic educators go further, planning and carrying out educational programs which include as their content information pertinent to the possible transitions or crises of the coming decades, and which frequently present processes for long-range planning on the personal, societal, and global levels.

Future studies courses and programs have been developed for virtually all age levels. Isolated courses are the most common, but multi-disciplinary progams with several staff do exist at all levels from elementary to college (Cornish, 1977, pp. 421-490). The University of Massachusetts (Amherst), the University of Minnesota (Minneapolis), and Webster College (St. Louis, Missouri) offer degrees in education with specializations in future studies. Educational offerings for adults include the conferences and publications of the World Future Society and other conferences, expositions, and symposia addressing specific problems or the future in general.

Although these educational programs are varied, there are recurring themes in their descriptions; a central goal is the development of individuals able to cope effectively with the future, able to shape reality rather than be the passive recipients of change. The Montclair, New Jersey, Future School is a more elaborate program than most, but its aspirations are probably typical of many other future studies offerings. A descriptive brochure contains the following phrases:

> Students will develop confidence that they can influence and change the future . . . belief in their own capability . . . exploring alternatives . . . image making . . . the habit of anticipation . . . critical thinking . . . flexibility . . an open mind . . . willingness to give new ideas a fair hearing . . . deciding intelligently. The major objective . . . is to enable students to see that the future is understandable and can be shaped. (Montclair Public Schools, n. d.)

One way in which the Montclair program seems to be representative is in its ambition to do more than transmit information and intellectual skills. Attitudes (confidence, open-mindedness), aspirations (to influence and change the future), and matters of cognitive style (the habit of anticipation, flexibility, critical thinking) figure significantly in the objectives of future studies programs. One could develop an image of the learner who had successfully completed such a program, which might stand as a goal for many futurist educators: an individual actively engaged in thought and planning about the future, whose decisions are based on informed judgments about possible and likely events, and whose actions are characterized by a realistic optimism about the prospect for influencing future events. Future activism is a concept which embodies this statement of the goal.

Unfortunately, little research has been done on the attributes which future-oriented educators would like to influence. Many such attributes have not been operationalized in the form of a measurement tool. There seem to be little or no data on a variety of research questions which would be useful to the future-minded educator, such as:

- Do the specific skills or attitudes proposed as major objectives actually correlate with future active behavior? Which, if any, correlate most strongly?
- Can future activism be acquired or enhanced? What educational activities contribute to it? Is there a developmental sequence which sets limits on the development of this orientation?
- What attitudes or attributes present barriers to the development of a future activism orientation?

With the exception of the first and the last, these questions will not be addressed by this study. They are presented here as examples of questions which can be researched only with the aid of an instrument which measures future activism. The very development of such an instrument should serve to advance the field of future studies education by refining concepts, investigating the dimensionality of this particular realm of attributes, and providing a clear and specific operationalization of variables important to this field.

In summary, four main points underscore the significance of the study:

(1) In recent decades, there has been an increasing interst in systematic study of the future.

(2) There are educators who share that interest.

(3) Those educators operate with little guidance from formal research that would enlighten their choice of objectives or indicate the feasibility of achieving specific objectives.

(4) An instrument which would make such research possible would be a significant contribution to the development of this type of educational program; if the instrument had sufficient sensitivity to measure the impact of particular educational interventions it would be directly useful to educators as well as to researchers.

CHAPTER II

REVIEW OF LITERATURE REGARDING RELATED CONCEPTS AND INSTRUMENTS

The wide range of concepts and a vast research literature are potentially relevant to future activism as defined in Chapter I. Two especially salient concepts were selected as the primary foci of this literature review: locus of control and time perspective. It was found that the temporal aspects of locus of control are largely unexplored; the distinctions between past, present, and future tense wordings and between immediate and remote (future) outcomes in locus of control instruments have not been investigated. Furthermore, the aspects of time perspective which have been studied widely are not directly relevant to future activism. Other conceptual difficulties and/or psychometric weaknesses make existing concepts and instruments inappropriate to the problem posed in Chapter I.

The following presentation documents these conclusions. It begins with an examination of Rotter's locus of control concept and his measure of it. Rotter's is probably the most frequently cited conceptualization of personal efficacy or internal control of life situations. This is followed by summaries of two major literature reviews regarding time perspective, Wallace and Rabin's (1960) and Vella's (1978). A number of specific studies illustrate the variety of conceptual schemes and measurement approaches used in recent research. Those included are from Vella's (1978, pp. 34-37) list of most commonly used instruments, with

the addition of Plante's (1977) study. The review concludes with summaries and conclusions regarding the conceptual schemes and the measurement devices in this body of literature.

Locus of Control

The concept of locus of control was developed by Rotter (1966) as one variable in a broader theory of generalized expectancies which influence an individual's social learning by shaping the interpretation of events as either reinforcing or non-reinforcing (Rotter, 1954). However, the concept and its measures have seen diverse application.

Rotter defined locus of control in terms of two extreme types: individuals who perceive themselves as agents, responsible for what happens to them (internal control), and others who perceive themselves as objects, acted upon and having their lives shaped by outside forces (external control). A direct logical connection can be drawn between these concepts and future activism: a belief in one's ability to influence the future is a necessary condition if thought and action with the intention of influencing future events are to be a rational investment of time.

Many measures of locus of control have been developed (Educational Testing Service, n. d.). Rotter's own, the I/E Control Scale (Rotter, 1966) is one of the most popular. It consists of 23 paired statements in a forced-choice situation, each pair consisting of an internal and an external statement. Topics of the statements include formal education

and grading, careers, personal decision making and success, politics and social problems, and general items about success and misfortune.

Despite the relevance of the locus of control concept, there are a number of concerns which make direct application of the Rotter I/E Control Scale inappropriate; some of these concerns apply to the other locus of control instruments as a group. First, there is no distinction between control of outcomes in the present or very near future as opposed to outcomes in the more distant future. None of the I/E Control Scale statements is worded in future tense; only one has a direct implication for the future:

> It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

Without empirical support, it is inappropriate to generalize from present tense to future tense--to assume that individuals preferring internal control statements worded in the present tense are in fact "internals" regarding future events.

A second concern about the Rotter scale is that it yields only a single score despite the fact that, conceptually and empirically, there are several dimensions to the internal and external statements. Gurin et al. (1969, p. 35) showed through factor analysis that those items worded in first person loaded on a different factor than the third person items. For several groups of Afro-American subjects, the first person items, but not the third person items, correlated with measures

of motivation and achievement orientation. Gurin et al. identified the first-person items with a sense of personal control and the third-person items with a more generalized value or belief similar to the work ethic. In effect, these researchers found with these subjects two levels of internality.

Collins (1976) also conducted a factor analytic study of the Rotter instrument, but before administering it he coverted it from forced-choice pairs to 46 separate items, each with a five-point Likert scale. With a sample of 300 University undergraduates, four relatively orthogonal subscales emerged from a rotated principle component factor analysis. Collins interpreted these factors in terms of four beliefs:

- the world is difficult-easy;
- the world is unjust-just;
- the world is predictable-unpredictable;
- the world is politically unresponsive.

This finding of multiple dimensions of externality which are relatively orthogonal suggests that treating internal/external locus of control as a unitary concept is arbitrary. This concern is supported by the fact that at least three of Collins' four factors are plausible, rationally justifiable interpretations of reality; it may be true, at least in the experience of certain individuals or socioeconomic groups, that the world <u>is</u> difficult, unjust, or politically unresponsive--and therefore that one's potential for internal control of events is limited by accurately perceived circumstances. Of the external belief-groups, luck stands apart as a possible indication of a pre-rational view of

causality--superstitious or fatalist. However, a belief in luck may be a belief in the influence of random or chance events--no less rational than scientific theories which utilize random or probabilistic modeling, such as genetics. In other words, further development of items in the luck subscales might reveal that this is in reality more than one factor.

The demonstrated existence of subscales within the Rotter instrument does not reduce the relevance of the locus of control variable to the objectives of this study, but it does indicate greater complexity than the instrument measures. A future activism instrument would require future-tense items for locus of control. The instrument might well distinguish various aspects of external control; this could prove useful in light of the potential diagnostic application of the proposed questionnaire.

Time Perspective

Conceptual frameworks. A substantial number of studies have been directed toward conceptualization and measurement regarding time perspective. Variables frequently addressed include temporal orientation (the direction of the temporal perspective--past, present, or future); extension (the range of an individual's temporal thought, past and future); and temporal attitudes (an open-ended set of time-related attitude measures). Literature reviews by Wallace and Rabin (1960) and Vella (1978) provide an overview of this research and are therefore summarized here.

Wallace and Rabin (1960) reviewed research on "temporal experience," and identified a trend toward the study of "the relation of temporal experience with other personality phenomena" (p. 213). They identified "time orientation" and "time perspective" as familiar concepts in the literature and cited Wallace's (1956) definition of time perspective as "the timing and ordering of personalized events." More specific concepts pertaining to temporal experience were also identified by Wallace and Rabin: orientation (past, present, or future; p. 232); extension, defined by Wallace (1956) as the length of the time span which is conceptualized, and coherence, defined by Wallace (1956) as the "degree of organization of the events in the future time span." Time estimation--the ability to judge the duration of brief time intervals--was also cited as an area of research (p. 217).

Wallace and Rabin considered developmental influence to be an important area of investigation, and stated that

> The time concept, with ever widening past and future references, continues to develop through the thirteenth or fourteenth year, when the adult concept first emerges. (1956, p. 217)

Apparently, they considered the notion of continuity and increasingly accurate time estimation as key aspects of this "adult concept." The ability to postpone gratification was also identified as a related capacity, subject to development because it is dependent in part on the acquisition of an understanding of the time continuum.

Cultural influences were considered important by several authors in the development of time perspective (Wallace and Rabin, 1960, p. 227). Lewin (1942) identified time perspective as a dimension of the

"life space" and asserted that it was subject to social shaping. Frank (1939) held that "culturally determined attitudes about notions of temporality constitute one major aspect of the influence of culture upon behavior" (Wallace and Rabin, 1960, p. 227).

Three principal methods for measuring time-related concepts were reported by Wallace and Rabin: projective methods, recent thoughts inventories, and future events estimation. Projective methods include the Thematic Apperception Test, used by Fink (1953), among others, and scored for past, present, and future imagery. LeShan (1952) presented subjects with a story completion task not based on the TAT.

Eson (1951) asked subjects to recall recent thoughts and scored each item as past, present, or future. Israeli (1936) asked subjects to create future autobiographies; Wallace (1956) had subjects list possible future events in their own lives and state a probable date of occurrence for each. It was apparently fairly common to combine several approaches in one study; for example, Teahan (1958) measured temporal extension using Eson's technique as well as LeShan's story completion task and a story writing task based on selected TAT cards. He found temporal extension to be correlated with academic achievement and optimism.

By 1978, many new measures of time-related concepts had been developed. Vella (1978) was able to identify approximately 130 different instruments (pp. 13-25) for the assessment of one or more of five temporal concepts. For three of the five, Vella adopted the definitions of Wallace and Rabin (1960):

Extension--"refers conceptually to the length or range of the individual's time perspective. It also refers to any quantitative measure of how far the individual extends himself into the future or the past."

Orientation--"refers to the direction of the temporal perspective--toward the past, present, or future."

Coherence--the degree of organization of events in the past and/or future extension.

Vella's fourth concept was derived from Kastenbaum (1961):

Density--the number of events and experiences that an individual can spontaneously envision in the past or future.

Whereas extension and coherence account for the range and integration of memories and anticipations, density is concerned with the richness of images in different time zones.

The fifth concept is Vella's own addition:

Temporal attitude--the affective response of an individual to his own temporal extension or orientation; also, "a learned and enduring perception that influences the thought or behavior of an individual."

Temporal attitude is a complex and open-ended set of variables; Vella (1978, p. 9) cites fatalism about the future, flexibility about time, and goal-directedness as possible examples. He also includes under the label "temporal attitudes" an evaluative dimension--favorable or unfavorable attitudes about different periods of time, i.e., past, present, and future. (This complexity becomes especially problematical when Vella groups a variety of temporal attitude instruments in his multitrait, multimethod study of time measures.)

Time perspective instruments. Vella catalogs measures of the five temporal concepts (pp. 13-25) according to the type of measurement procedure: direct questioning, dating of personal historical material,

dating of generalized feeling-states and activities, extraction of temporal attributes from projective material, graphic representation of time, attitude scales (e.g., Likert scales), and other methods (e.g., semantic differential) (Vella, 1978, p. 12). The first five methods were identified by Perlman (1973).

Of Vella's five concepts, two have direct bearing on the future activism concept proposed here: temporal attitude and temporal orientation. Vella's review included conceptual schemes and instruments focused on any or all of the time zones (past, present, future); the discussion here will be limited to the most promising measures of future attitudes and future orientation identified by Vella. These instruments are reviewed to illustrate the relationship of the present study to past efforts at identifying key variables and designing instruments.

Vella (1978, p. 34) identified ten "most popular" instruments measuring temporal attitude. Five of these instruments are reviewed here in varying levels of detail according to the salience of the particular instrument to the present study. Each commentary begins with a statement of the concept or concepts the researcher is investigating, the origin of the concepts, and their relation to future activism. Reliability, validity, hypotheses tested, and other comments are presented as appropriate.

Future Time Perspective Inventory. Heimberg's (1963) Future Time Perspective Inventory is one of the few instruments which specifically measures future time perspective. The Inventory, as Vella (1978, p. 34) describes it, "attempts to measure the degree to which the future is

seen as predictable, structured, and controllable." It has five component concepts, identified by factor analysis: articulation with the flow of time, optimistic mastery, degree of future time structure, time mindedness, and rejection of fatalism. The instrument consists of 25 Likert-scale items. The five scales have 8, 5, 11, 2, and 6 items, respectively.

Reliability findings are mixed. Heimberg used coefficient alpha as a reliability indicator and found coefficients of .50 to .76 for individual scales (N=107) and .85 overall. Brandenburg (1971) found somewhat less satisfactory reliability: a split halves r of .71 and a test-retest reliability of .70 (N=45). Vella (1978, p. 90) found a test-retest reliability of .75 (N=25), a split-halves (odd-even) score of .61 (N=32), and an r_c of .76 (N=32).

Heimberg's instrument is of particular interest because of the close relationship of her scales to the proposed future activism concept. However, two of the most interesting scales, optimistic mastery and rejection of fatalism, were found to have low reliabilities by Vella (1978, p. 325). One of these scales, optimistic mastery, would seem to be a two-part concept; optimism and mastery (or a related concept, such as locus of control). These two have more often been treated as separate variables. The shortness of the instrument--25 items for an instrument with five scales--is questionable, and probably contributes to lower-than-ideal reliabilities.

Inventory of Temporal Experiences. Yonge (1973) based his Inventory of Temporal Experiences on a conceptual scheme developed by

two Dutch philosophers, Hugenholz (1959) and van Lennep (1957). It consists of four modes of time, which Yonge (1973, p. 476) describes as follows:

> Human time: the time of . . . discovery, freedom, self-realization, broadening horizons, possibilities, choices, creativity, and change.
>
> Animal time: corresponding to discontinuity; durationless, static, and somewhat overwhelming; made up of instants without horizons.
>
> Vital time: longitudinal, connected, unitary, fluid, dynamic, lasting, integrated.
>
> Physical time: longitudinal, but linear; point-like succession of events; events in reference to clock and calendar measurement.

The Inventory of Temporal Experiences consists of 124 statements to be rated on a four-point Likert scale (agree-disagree). Scores for the four modes of time are derived from *a priori* assignments of items to scales; Yonge did not explore other empirical groupings of items through factor analysis.

Yonge's concepts are complex and unfamiliar; they intertwine concepts chosen by other researchers, such as coherence, extension, and temporal attitude. In this way, Yonge's concepts provide a reminder that temporal experience may in fact *be* a complex phenomenon which is not sufficiently captured by elemental constructs. However, the difficulty of interpreting an individual's profile of scores on these four dimensions is somewhat of a problem. For the purposes of measuring future activism, the instrument provides no measure which is distinctively of the future; thus it is not directly relevant to the current project.

Time Attitude Inventory. Cottle's Time Attitude Inventory (1969) consists of three scales: temporal anxiety, egocentric present orientation, and fantasy intolerance. These scales emerged as the principal three factors in a principle axis factor analysis with Kaiser Varimax rotation.

Cottle's instrument consists of 39 items with a seven-point Likert scale. The three scales identified above consist of twelve, seven, and six major items, respectively.

Sample items for the three scales--items that loaded heavily one each--are as follows:

Temporal anxiety: "I'm afraid I won't be able to lead a full life."

Egocentric present orientation: "To be a happy and healthy person one has to learn not to be concerned about the future."

Fantasy intolerance: "Most people really believe in myths and stories of olden times and there is nothing wrong with this."

The temporal anxiety scale correlates .55 with the Taylor Manifest Anxiety Scale for men, .48 for women. Using the Temporal Attitude Inventory in conjunction with other instuments to study the relationship between orientation to time, manifest anxiety, and achievement values, Cottle concluded that:

1) Anxiety in general correlates with apprehension about the future.
2) Anxiety functions in decreasing the sense of relatedness between time zones.
3) Whereas achievement values may enhance one's realistic acceptance of time's unalterable properties, anxiety

encourages fantasy resolutions of realistic temporal problems. (Cottle, 1969, p. 541).

Each of Cottle's scales has some bearing on the proposed future activism concept. Anxiety about time, and specifically about the future, may be related to an individual's willingness to think about, plan for, or attempt to influence the future. Some individuals may have beliefs which convince them that it is better to think about the present, or to avoid thinking about things which are not factual. Unfortunately, none of the scales is distinctively future-oriented, so none were adopted per se.

Personal Orientation Inventory. Shostrum's Personal Orientation Inventory (1966) consists of 150 items in 12 scales of which one is time competence (23 items). The instrument was designed as an operationalization of the self-actualization concept of Maslow (1962). Shostrum scored the time competence scale in light of Maslow's theory, in the direction of involvement in present time. Vella (1978, p. 34) reinterpreted time competence as an appropriate blend of past, present, and future time, and rescored the Shostrum time competence scale accordingly.

Shostrum found a test-retest reliability of .71 (N=48) for this scale. Yonge (1975) used Kuder-Richardson formula 21 and found a coefficient of .57, which is only marginally satisfactory. Vella, using his revised scoring scheme, found a test-retest reliability of .76, split halves (odd-even) reliability of .43, and r_c of .60.

A concept such as time competency, which is similar to Heimberg's optimistic mastery, is a potential component variable of future

activism, but use of Shostrum's scale, as reinterpreted by Vella, is questionable on several grounds: the low internal consistency found by Yonge, the dubious practice of extracting one scale from its original context (embedded randomly in a longer instrument), and the fact that it was not designed as a measure of future time perspective.

Time Attitude Scales. Calabresi and Cohen (1968) developed a nameless instrument which Vella identified as the Time Attitude Scales. Four factors were identified through a rotated orthogonal factor analysis (N=508). The factors are listed here and illustrated with an item that loaded strongly on each:

Time anxiety: "It makes me a little uncomfortable to think about my future."

Time submissiveness: "I am almost never late for work or appointments."

Time possessiveness: "It bothers me to think how fast time goes."

Time flexibility: "I can spend hours working at a pastime, like a puzzle or a workshop project, and lose track of time."

The Calabresi-Cohen instrument consists of 46 statements with a six-point (agree-disagree) scale. Sixteen, eight, six, and nine items are identified with the four factors, respectively. Calabresi and Cohen computed coefficient alpha's as measures of reliability, and found them to be in the range of .47 to .79 (N=508) for the four scales.

Calabresi and Cohen also demonstrated relationships between their Time Attitude Scales and four personality variables, measured by 45 items in the same Likert-scale format as the temporal attitude items. Factor analysis produced scales which they labeled restless dysphoria,

extraversive adjustment, tense dependency, and excitement seeking. By correlating scores on the temporal attitude scales with scores on the personality factors, with college students, and with mental health inpatients and outpatients, they came to the following tentative conclusions:

> . . . Anxiety about the flow of time, need to control time, and fear to be deprived of time are the predominant time attitudes of those who experience to a high degree feelings of emptiness and frustration, lack self-confidence and initiative, are dependent on old habits, and seek direction and protection from others.
>
> . . . A flexible attitude about time and acceptance of the flow of time are found in individuals who are reasonably comfortable with themselves and their environment, even though their spontaneity and responsiveness are somewhat childish and superficial. (Calabresi and Cohen, 1968, pp. 436-437.)

Also, time anxiety and time submissiveness had significant predictive power in distinguishing neurotic, psychotic, and borderline mental health inpatients and outpatients.

Calabresi and Cohen's findings regarding time anxiety strengthen the case for including a future anxiety scale as a potential correlate or component of future activism. Their other three concepts are unique to this instrument. Their relationship to future activism is speculative: a sense of submissiveness to time or flexibility about time might be antithetical to control of one's future. On the other hand, future activism has to do with future personal influence on future <u>events</u>; Calabresi and Cohen's scales have to do with time itself. All four of the scales mix past, present, and future, and are therefore not suitable for inclusion in a future activism instrument. With the possible exception of time anxiety, the relationship to future activism is

too tentative to use this instrument for validation purposes. It does have potential for later research in conjunction with a future activism instrument.

Future Attitudes Questionnaire. The Future Attitudes Questionnaire (Plante, 1977) deserves special mention because its purported dimensions overlap considerably with those proposed for this study, and because Plante's findings helped to motivate the present study. The Future Attitudes Questionnaire (FAQ) is a measure of active-reactive future time orientation, which Plante defined (p. 5) as "the degree to which a person is future-oriented and believes that human effort and personal decision making can have a decisive effect on the course of future events (active) versus how much s/he is present-oriented and believes that the future will be determined primarily by factors of fate and chance (reactive)."

Plante asserts (p. 5) that "a pure active outlook is comprised of three aspects: (1) thought and concern about the future (future orientation); (2) a view that many things are possible (plural); and (3) a belief that people have a 'voice' in deciding the outcome of events (volitive). A pure reactive outlook is comprised of three opposing aspects: (1) inattention to the future (present orientation); (2) a non-causal, incidental view of future events (random); and (3) a notion of predestiny and fate (fixed)."

Each item in the FAQ can be identified with one or more of the three aspects identified by Plante, but he does not explore the possibility that the FAQ is multi-dimensional. Plante's original data

are no longer available, so it is impossible to apply factor analytic or other techniques to his data.

The FAQ consists of 25 statements with a two-point (agree-disagree) response scale plus one multiple-choice question. Plante compared this response format with a four-point Likert scale and found "no clear differences" between the two sets of scores with a sample of 22 high school students; the analysis procedure was not described (pp. 55-56). Considering that the mean scores on the FAQ were in the neighborhood of 6 (on a range from 0 to 26, with 0 as the "active" extreme), there was a strong preponderance of "agree" responses across items and respondents. In order to facilitate correlational and factor analysis, a five-point scale would seem preferable.

The items included in the FAQ were validated a priori through a jury technique in which five panelists assigned items to an active or reactive orientation (Plante, 1977, p. 56-57). Apparently no empirical item analysis was undertaken; it would be desirable to confirm the correlation of individual items to the overall scale (or to subscales, if any are identified).

Plante reports a test-retest reliability of .74 (N=28, p. 58). A correlation of .50 with the Nowicki-Strickland I-E Scale was observed (N=29, p. 60); this is not surprising in light of the similarity between items on the two scales: Plante notes that "nearly ninety percent of the items on the FAQ appear to be internal-external related" (p. 60).

For purposes of hypothesis testing rather than instrument validation, Plante analyzed the relationship between the FAQ and two other

instruments, the Coopersmith Self-Esteem Inventory and the Schwartz Responsibility Denial scale. Plante used a t-test between the means on the SEI and RD for two groups--the high and low quintiles on his FAQ--as his measures of strength of relationship; significant differences were found in both cases. Sufficient original data were secured from Plante to enable this researcher to compute Pearson correlation coefficients on the entire samples (rather than the extreme quintiles):

FAQ - Self Esteem Inventory $r = .36$ (N=363)

FAQ - Responsibility Denial $r = .34$ (N=368)

In other words, FAQ is moderately successful as a predictor of the two other variables.

Plante's instrument is the most directly relevant to the present study. Each of his concepts--future orientation, the view that many things are possible, and a belief in one's personal influence on the outcome of events--are all compatibile with the proposed future activism concept; to this writer's knowledge, Plante was the first to propose that these might be components of one overall variable, and to label it as an active/reactive future time orientation. Despite the close similarity between Plante's conceptualization and the study proposed here, several points justified further investigation and the development of a new instrument: potential limitations of his two-point response scale, lack of empirical analysis in the design of the scales, a desire to explore the possible multi-dimensionality of the future activism concept as compared to the more limited conception of Plante, and a need to more carefully distinguish future activism from locus of control.

Conclusions Regarding Existing Instruments

There is neither an existing conceptual framework nor an instrument which directly addresses future activism or provides an adequate base for exploring the research questions stated under "Significance of the Study." An adequate conceptual scheme would be one which (1) addresses thought and/or action in anticipation of and with the intention of influencing the future, in keeping with the definition of future activism; and (2) is distinctively future-directed (or includes components which are). An appropriate instrument would be (3) reliable, (4) valid (and easily interpretable), (5) efficient, especially in terms of testing time required, (6) suitable for general audiences (i.e. not exclusively for students or some other specialized group), and (7) scored (and reliable) in terms of specific variables or factors rather than a general one.

The table below summarizes the findings of this literature review with regard to the criteria just stated. Most of the instruments address thought or action about time, at least indirectly. About half (Rotter's, Plante's, Heimberg's, and Shostrum's) address one or more of the concepts proposed in the introduction above as potential subscales of future activism. However, only two have a distinctively future slant (Heimberg's and Plante's). The instruments generally have satisfactory reliabilities, but their validities are not as well substantiated. The efficiency of the instruments, judged in terms of the number of items, is generally good, although the Yonge inventory is long at 124 items for

four scales, and the Heimberg instrument, with 25 items and five factors, is too short for reliable scoring of the factors. All are suitable for general audiences. The last criterion, scoring in terms of specific (component) variables or factors, is salient only for the scales which are deemed conceptually close to the desired instrument, by passing criteria one and two. Both Heimberg's and Plante's instruments are problematical in this respect--Heimberg's because of reliability problems and Plante's because component scores were not developed.

As Table 1 shows, none of the instruments reviewed meets all of the criteria. Furthermore, although many are relevant in some way to the future activism concept, none provide a balanced measure of the concept as defined, with two or more distinct scales which together reflect the overall intent of the definition. Because of the lack of an adequate conceptual framework or instrument, it was determined that a new instrument should be developed.

TABLE 1

ATTRIBUTES OF EXISTING INSTRUMENTS WHICH MEASURE FUTURE TIME PERSPECTIVE AND RELATED CONCEPTS

Criterion / Instrument	1 thought and/ or action	2 distinctively future	3 reliable	4 valid	5 efficient	6 suitable for general audiences	7 specific variables
Rotter's I-E	yes-action (& beliefs about infl. of action)	no	yes	questions raised by factor analysis	yes	yes	no (evidence indicates existence)
Other locus of control or mastery scales	-	none known which yield a distinctively future score	-	-	-	-	-
Heimberg's Future Time Perspective Inv.	yes	yes	overall-yes most relevant factors - no	some support (Vella, 1977 p. 324)	too short for sub-scale rel.	yes	yes, but see reliability
Yonge's Inventory of Temporal Experiences	indirectly	no	yes	yes (Vella, 1978, p. 325), difficult to interpret	moderate	yes	yes, but difficult to interpret
Cottle's Time Attitude Inventory	marginally (anxiety)	no	yes	?	yes	yes	yes
Calabresi & Cohen	yes (marginally)	no	yes	some support: corr. w/prsnlty measures	yes	yes	yes
Shostrum's Personal Orientation Inventory (Time Competence scale OCS reinterpreted by Vella)	yes	no	yes	questionable (Vella, 1978, p. 325)	yes (if extracted from longer instrument)	yes	no, although items not homogenous (Vella 1978, p. 326), time competence a forced choice
Plante's Future Attitudes Questionnaire	yes	yes	yes	some support	yes	yes	not analyzed

CHAPTER III

INSTRUMENT DEVELOPMENT: METHODS AND FINDINGS REGARDING PRELIMINARY VERSIONS OF THE INSTRUMENT

Overview of the Methodology

The study consisted of construct development and the development and construct validation of an instrument to measure future activism. Construct development in this case consisted of specification of an overall definition of the concept, future activism (done above, as part of the "Statement of the Problem"), and the identification and operationalization of component variables of future activism through the process of instrument development described below. In other words, construct development was not conceived as an independent step prior to instrument development, but as an overlapping step which took place in part through the empirical process of instrument development.

Development of the instrument proceeded according to the following steps: (1) identification of potential component variables--variables consistent with the definition and which are therefore potential scales or factors in a measure of future activism; (2) generation of items consistent with the definition of selected potential component variables; compilation of items into a draft questionnaire; (3) preliminary testing of the draft instrument; (4) analysis of preliminary data for (a) internal consistency of scales in terms of proposed component variables (a priori groupings); (b) factor analysis of the data for the purpose of

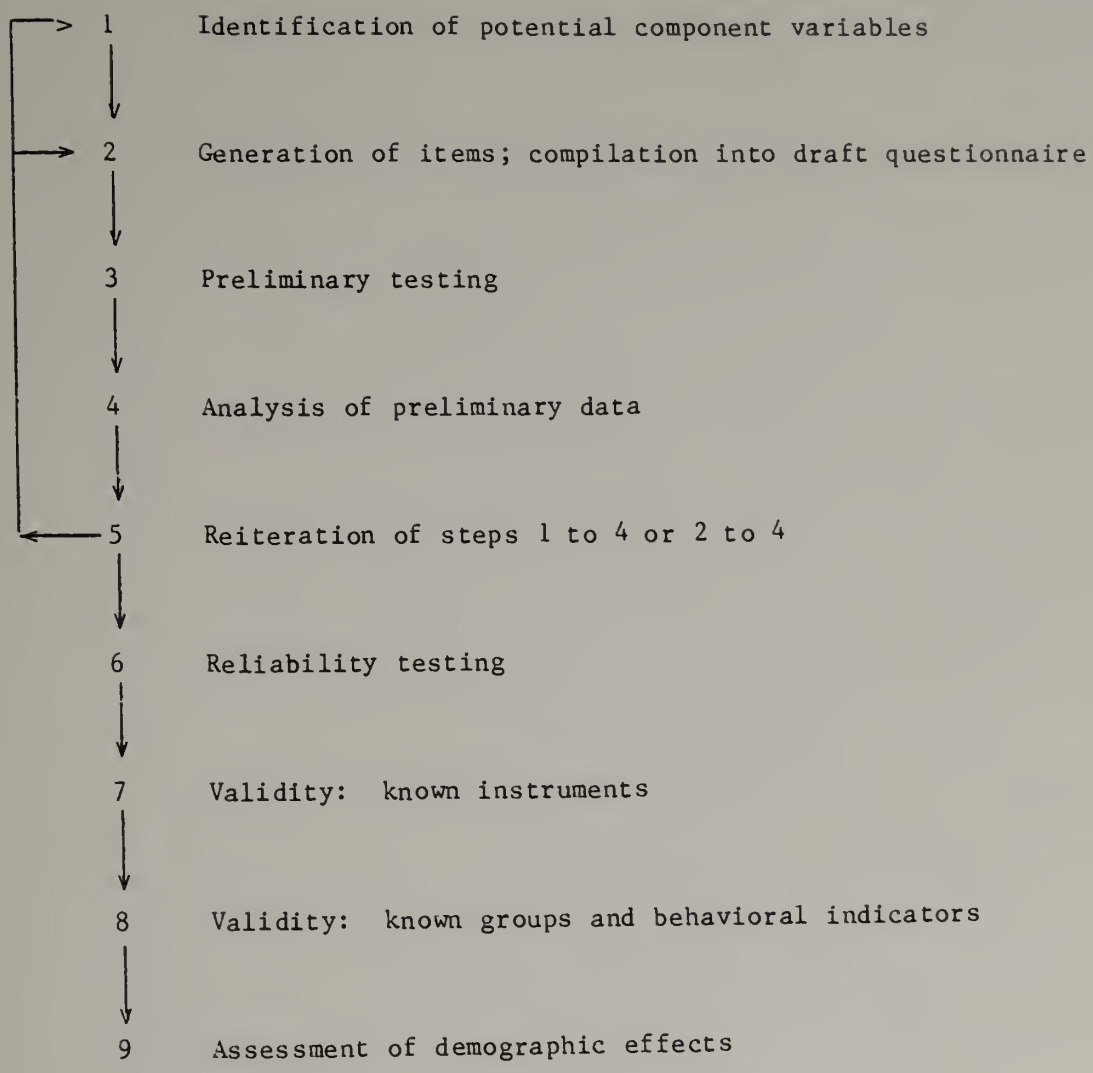
confirming or modifying proposed item groupings and variable identifications; and (c) items analysis, for the purpose of identifying individual items which are inconsistent or otherwise weak, so that they can be modified or eliminated; (5) reiteration of steps (1) to (4) or (2) to (4)--revision of the list of variables or of items based on the analysis of preliminary data leading to development, testing, and analysis of a revised instrument.

Steps six through nine, which include the assessment of reliability, validity, and possible bias or correlation with demographic variables, were undertaken for the most part with respect to the final form of the instrument, Version V. Methods and findings pertaining to these steps are presented in Chapter IV.

Through the iterative process identified as step five in the instrument development process, five versions of the instrument were generated. The distinctive features of these versions are presented briefly here.

Version I was designed to test a modified version of the Plante Future Attitudes Questionnaire plus a small number of pilot items for three novel scales. Version II explored a considerably larger number of variables; it included most of the Version I items (many with revised wordings) and a substantial number of new items. Version III involved a reduced number of scales, selected for their relevance to the overall concept of future activism and supported by the data generated for Version II. Some Version II scales were partitioned or reconceptualized, and some individual items were assigned to different scales when

FIGURE 1. STEPS IN INSTRUMENT DEVELOPMENT



empirical findings suggested an interpretable reassignment. Many new items were added.

Version IV was, in reality, a variation of Version III. The initial 81 items remained unchanged; a new scale plus filer items were added at the end. Version V, the final instrument, was created by deleting items from Versions III-IV in order to achieve optimal efficiency.

The development of these five versions is described in the following sections. Each section addresses one of the first four steps of the instrument development sequence: identification of potential component variables, generation of items, preliminary testing, and analysis of data.

Identification of Potential Component Variables

Theoretical Considerations. The objective of this step was to develop a list of variables which, based on logical and/or empirical grounds, would have sufficient relevance to the definition of future activism to merit further investigation within this study. This approach represents a decision to address the issue of content coverage by specifying the content domain in conceptual terms. The study is therefore consistent with the thinking of Messick (1975; 1980, p. 1018) in linking content validity with construct validity, and not with the classic, behaviorist approach of Cronbach (1971) which stresses task description as the appropriate means of clarifying content domain.

Refinement of the conceptual framework in successive versions of the instrument was based on empirical findings, and especially on factor

analysis or inter-item correlation matrices. This aspect of the approach was consistent with Loevinger's (1957) preference to deal with content representativeness and response consistency jointly (Messick, 1980, p. 1018). Thus, items, and even entire scales representing potential component variables, were retained, reconceptualized, or deleted based on empirical findings. The risks of this approach are indicated by Messick:

> The elimination of certain items from the test because of poor empirical response properties may sometimes distort the test's representativeness in covering the construct domain as originally conceived, but it is justified if the resulting test thereby becomes a better exemplar of the construct as empirically grounded. (Messick, 1980, p. 1018)

Deletion (or reconceptualization) of variables was appropriate in the present case because of a desire to represent future activism with a minimal number of internally consistent and relatively distinct component variables (and resultant instrument scales).

Component variables. It was assumed that a relatively large set of variables could potentially serve as indicators or predictors of future activism. Eight major groups of variables were introduced into the first three versions of the instrument. They are listed in Table 2 with abbreviated names which will be used in future references. Table 4, at the end of this chapter, presents a history of the distribution of scales and items in the five versions. The discussion which follows includes definitions, conceptual origins, and rationale for inclusion of each group of variables.

Future orientation (Concept 1A in Table 2) is defined here as the degree to which the future is a focus of attention for a particular

TABLE 2

CONCEPTS CONSIDERED AS POSSIBLE COMPONENT VARIABLES OF FUTURE ACTIVISM

1A) Future Orientation
1B) A belief that the future is knowable
1C) A belief that future orientation is helpful
1D) A tendency to personalize future and global events
1E) Societal orientation

2) Planfulness

3A) Plural
3B) Option-seeking behavior

4A) Volitive
4B) Social efficacy
4C) Internal control of societal future events
4D) Internal control of personal future events
4E) Expectation of success

5A) Fate, destiny
5B) Luck, chance
5C) Random, unpredictable, unknowable
5D) Powerful others control future events
5E) Future acceptance

6) Future anxiety

7A) Flexibility
7B) Open-mindedness

8) Intended behavior

individual. Some authors write in terms of temporal dominance, and attempt to identify the time zone which predominates in an individual's attention. For example, Wallace and Rabin's definition of temporal orientation, quoted in Chapter II, is "the direction of the temporal perspective--toward the past, present, or future" (1960). In the present study, it is assumed that rich or intensive thought about the future is not to the exclusion of thought about other temporal zones. This approach is consistent with that of Plante, who defined future orientation as "thought and concern about the future" (1977, p. 5).

A measure of future orientation would be a measure of thought about--i.e., in anticipation of--the future. Thought about the future would stand in the logical position of a necessary precondition to any thought or action with the intention of influencing future outcomes. Therefore this variable, because of its logical relationship with the definition of future activism, has face validity as a component variable of the future activism construct--perhaps more so than any of the others.

Two concepts closely related to future orientation were identified in the development of Version II as potentially distinct concepts. One was originally conceived as the idea that the future is knowable (1B), to some extent. Analysis of Version II data suggested that the scale developed to measure this variable was in fact distinct from future orientation, that it was more closely associated with the variables of group five (fate, luck, etc.; see below), and that it might more appropriately be labeled in terms of the reverse-worded items, as a

belief that the future is controlled by random factors, is unpredictable, and is basically unknowable.

The second concept which evolved from a closer examination of the future orientation concept and items is a belief that a future orientation (thinking about the future) is helpful (1C). The potential distinctiveness of this concept was suggested by a utility theory viewpoint: if thought about the future is believed by an individual to have (subjective) utility, that individual should be more likely to engage in it. Future orientation and "future orientation helps" are directly related in this theoretical framework, but are separate concepts. This concept was introduced in Version II.

The tendency to personalize the impacts of future and global events (1D)--to identify implications for one's personal life from knowledge about possible or probable events which are remote in time or in place--is less directly related to future orientation. It was conceived as a style of thinking about the future, but also as a variable which might show a strong relationship with future orientation, in that people who do personalize remote events might feel more invested in the future and tend to think about it more than others.

This "tendency to personalize . . ." was suggested by Meadows et al. (1972), p. 19), who estimated that for the human species in general, thoughts regarding the future and remote places are increasingly infrequent as the degree of remoteness increases, but that such thinking is certainly important for the survival of the human species. Toffler (1974, pp. 6-11) describes pseudo-experiments which indicate that even

when people do think about possible future events, they often do not draw implications for their personal lives. No formal operationalization of this concept is known to exist.

Societal orientation (1E) is defined as a concern for the human species; it is conceptually close to altruism and is also similar to a personalized concern for global events. It was included in Version II as a clarification of the "personalize" concept, but was deleted from successive versions because of the lack of a relationship with the future activism concept.

Planfulness (Concept 2 in Table 2) is defined as the degree to which an individual develops plans, intentions, timetables, and other structured thoughts which serve as guides for actions in the future. Planfulness, as defined here, is primarily within the realm of thought rather than overt action, but unlike future orientation, it is thought with the intention of influencing future outcomes. That constitutes its link with future activism.

Planfulness has been studied surprisingly little. Among time perspective researchers, Clifton (1971) appears to be unique in her inclusion of planning intentions and planning behaviors within her Time Perspective Questionnaire. In the present study, planning behavior was originally identified not from the literature review but from a factor analysis of the second version of the instrument, in which a number of planning items tentatively identified as future orientation items loaded on a separate factor. Miller, Pribram, and Galanter (1960) provide a conceptual framework for this variable.

Plural (3A) refers to Plante's concept (1977, p. 5) of a "belief that many things are possible." Plural items in Versions I and II attained only weak inter-item correlations, perhaps because of the philosophical problems surrounding this concept. At best, this variable is compatible with a variety of interpretations. The approach is similar in some ways to the concept of decision trees utilized by game theorists and utility theorists. It is also compatible with an optimistic outlook regarding the future--a sense of life relatively unbounded by constraints. The definition also seems to imply a free will position, although some of Plante's plural items could be interpreted as deterministic.

In order to minimize these complications, the concept of option-seeking behavior was adopted in the development of Version III. Option-seeking behavior (3B) is defined as behavior, overt or covert, which involves the identification and evaluation of options--that is, choices between possible courses of action which will produce different outcomes. This concept is logically related to future activism in that such behavior, or a preference to undertake such behavior, would presumably indicate a belief that it is possible for the individual to influence the outcome of future events. Option seeking entails a kind of thought about the future which presumably leads to choice and action intended to influence future outcomes.

The next group of items (identified in Table 2 as 4A to 4E) pertain to the control of future events. The initial concept in this group was Plante's volitive, (4A) which he defined as "a belief that people

have a 'voice' in deciding the outcome of events" (1977, p. 5). Social efficacy (4B) is defined as a belief in one's ability to alleviate social problems.

Rotter's locus of control concept suggested an alternative nomenclature for this potential component of future activism, but, as stated in Chapter II, Rotter's own scale emphasizes present-tense items and does not distinguish influence or control of outcomes in one's personal life from influence or control over broader, societal outcomes. Two potential component variables were identified from this analysis: belief in internal control of societal future events (4C) and belief in internal control of personal future events (4D) referring to an individual's belief that he or she can shape or influence outcomes in the future, in the societal and personal realms. All of these concepts (4A through 4D) are linked to future activism in that a belief in one's ability to influence future events is, logically, a necessary condition for ". . . action with the intention of influencing the future."

The last concept in the group, expectancy of success (4E), is essentially the general expectancy of success concept of Hale and Fibel (1976) which they grounded in Rotter's theory of general expectancies (1954). The concept was introduced here because of its potential relation to attempts to influence future events.

The next group of variables (5A to 5E) might be grouped under the broader concept of belief in the external control of future events--essentially the opposites of the internal control variables above (4C and 4D). Rotter's Locus of Control instrument, for example, utilized

statements dealing with luck, fate, and chance as external control choices in many of its forced-choice items. However, research by Collins (1974) cited in Chapter II suggests that there are several distinct factors within the control dimension. On this basis, as well as the empirical findings on the early versions of this study (see the Analysis section below), it was decided to treat these variables (5A to 5E) as potentially distinct from each other and from the internal control concepts.

Fate/destiny (5A) refers to a belief that forces of fate and/or destiny exert a significant influence over the outcome of future events. Luck/chance (5B) refers to a belief that luck and/or chance play a significant part in the outcome of future events. Random/unpredictable/unknowable (5C) refers to a belief that the future is basically unpredictable and/or unknowable, and that random factors play a significant part in the outcome of future events. Powerful others control future events (5D) refers to a belief that people in positions of power exert influence which outweighs the possible influence of ordinary individuals. Future acceptance (5E) refers to a belief that a passive response is the most appropriate behavior in many situations. All five of these concepts represent possible rationales for not attempting to influence future events; they constitute potentially distinct approaches or styles of abrogating control.

Future anxiety (6) is defined as anxiety brought about by thought or action directed toward the future. It was included in an instrument assessing future activism on the speculation that it might represent a

tension brought about by thought and concern about the future, and especially about possible negative outcomes, combined with a perception that no available actions will lead to satisfactory outcomes.

Flexibility (7A) and open-mindedness (7B) were included in early versions of the instrument with the idea that they might constitute important differences in styles of thinking about the future.

Intended behaviors (8) refers to an intention to undertake actions which would serve as criterion behaviors for future activism, i.e., discussions about the future, or efforts to influence future outcomes.

The set of variables just described actually evolved considerably through the course of this study. Empirical findings prompted reconceptualizing of component variables or partitioning of variables. The evolution of the conceptual scheme is reported in the analysis section later in Chapter III. The final set of variables is presented early in Chapter IV.

Generation of Items; Development of Instruments

Theoretical considerations. The measurement approach selected inevitably places constraints on the nature of the variables which can be assessed. In this study, a paper-and-pencil instrument was desired primarily because of its efficiency. The behaviors of interest were both covert (such as planning behaviors or other thoughts), and overt (action visible or audible to others). In a written instrument, self-report is the convenient indicator of covert behaviors. Furthermore, unless overt behaviors of interest can be demonstrated directly in the

paper-and-pencil format (as in an objective test), self-report may be the most convenient method of assessing overt behaviors as well. Beliefs about the efficacy of an activity (either an overt or covert activity) may be closely enough correlated with actual performance of the activity to serve as an indicator of it.

Self-report items of either overt or covert behavior are potentially subject to social desirability bias, just as attitude or belief items would be. They must be interpreted cautiously; validation through comparison of known groups or correlations with overt behavior is desirable.

Item generation. A five-point Likert scale was selected, with the points on the scale labeled "strongly agree," "agree," "neither agree nor disagree," "disagree," and "strongly disagree." (For Versions I and II, the mid-point was labeled "no opinion.")

For Version I, which was primarily an evaluation of a modified form of Plante's Future Attitudes Questionnaire, the 26 Plante statements were used with the five-point scale just described. Most of these items were retained in Version II, although the wording of many was revised. One or two Version II items were drawn from each of the following pre-existing instruments: the Nowicki-Strickland scale of internal-external locus of control (1973), the Neal and Seeman Powerlessness scale (1964), the Magnani Species Alienation Scale (1976), and the Campbell Personal Competence scale (Robinson, et al., 1968). In addition, about 150 novel items were generated as potential measures of specific component variables as defined in the previous discussion.

All items, whether pre-existing or new, were screened and, when necessary, revised or deleted to satisfy accepted editing standards for questionnaire items (e.g., Selltiz et al., 1976, pp. 547-558). In particular, it was considered important that (1) items should not consist of two parts--two phrases joined by a conjunction, which might produce ambiguity; (2) items should contain a minimum of broad, general, and potentially ambiguous words; (3) items should be as free as possible of unstated assumptions which might bias or confound the responses of some or all respondents; (4) items should be as free as possible of bias or emotional loading; there should be an approximately equal number of positive and negative wordings for each variable.

In addition to these editing guidelines, empirical considerations guided the selection of scales and of items which were retained in successive versions of the questionnaire. The data analysis procedures used and instrument modifications which resulted are described in this chapter.

Instrument development. The selection processes just described resulted in instruments of the following lengths: Version I, 36 items; Version II, 62 items; Version III, 81 items; Version IV, 92 items plus 12 filler items; Version V, 62 items plus 6 filler items. Items of the final version are presented in Chapter IV, Table 6. Selected items are also presented in the analysis section later in this chapter.

Items were sequenced randomly to form each version of the questionnaire. Some demographic data were gathered. Appropriate

introductions and instructions were provided which allowed each version to be self-administering.

Three short forms of Version II were developed, consisting of a common core of 16 items and an additional 14 to 18 unique items. The shorter forms were desired so that the questionnaire could be administered to individuals waiting for conference events to begin.

Preliminary Testing of the Instrument

Subjects and procedure. Empirical data for each version of the instrument were gathered and analyzed. Findings regarding Version I through IV influenced the design of the succeeding Version; data analysis procedures and a discussion of the resulting instrument modifications are presented later in this chatper.

As noted above, all forms and versions of the instrument were self-administering; that is, they contained adquate written instructions so that verbal instructions were unnecessary. Subjects were asked whether they would be willing to complete a questionnaire regarding attitudes about the future. There was no time limit; typically, subjects were able to complete four to six items per minute.

Version I was administered to 16 community college faculty and administrators participating in a future studies course offered by the University of Massachusetts School of Education at their institution. These subjects completed the questionnaire at the beginning of a class meeting midway through the course, in March, 1978.

Version II was administered to 403 individuals attending the "Learning Tomorrows" conference held at the University of Massachusetts in April, 1978. Approximately equal groups completed the three short forms of Version II; a small number of people attending specialized workshops at the conference completed the entire Version II. Most subjects received the questionnaire as they entered a lecture hall for a conference presentation and completed it while waiting for the presentation to begin.

Version III was administered to 246 undergraduate psychology students at the University of Massachusetts in December, 1979. Participation in research as subjects was for these students either a course requirement or a means of enhancing a course grade. Recruitment for the study took place in classes and through notices in the psychology building. The instrument was administered on six consecutive weekdays; subjects signed up for the time of their choice.

Of the 246 students who completed Version III, 44 completed it a second time, six or seven days after the initial administration. These students received an additional experimental participation credit for this second participation.

Version IV was completed by 66 participants at the "Unlearning the Twentieth Century" conference on the future of education held at the University of Massachusetts in November, 1980. Version V was completed by 41 participants at the University of Massachusetts School of Education Alumni Conference in May, 1981.

For each of these samples, participation in this study was voluntary. The 16 Version I subjects represented a 100% participation

by those present at the class in question. For Version II, approximately 10% who were asked whether they would be willing to complete a questionnaire declined, approximately 5% of the questionnaires distributed were returned blank, and approximately 5% were returned only partially completed. Version III was completed by all who came to the administration sessions. For Version IV, approximately 15% of those who were asked whether they would be willing to complete the questionnaire declined, and approximately 60% of the questionnaires distributed were not returned. For Version V, approximately 20% of those who were asked to complete a questionnaire declined, and 51% of those who took questionnaires did not return them.

With the exception of the psychology and alumni conference subjects, these samples consisted of individuals who had shown a manifest interest in the future by participating in the learning activity (course, conference) from which the samples were drawn. Thus, these samples are probably atypical of the general population with respect to future activism. This point will be addressed in the discussion of data in Chapter IV, particularly in the section pertaining to known group comparisons and behavioral criteria.

Analysis of Preliminary Data

Procedures. Data analysis was designed to provide a basis for refining both the list of component variables included and the specific items measuring those variables in successive versions of the instrument. The statistics calculated for each version varied according to the

objectives at each stage of the instrument development process and also the number of cases (subjects) available. Table 3 shows the procedures utilized in analyzing the first four versions. Versions III and IV are combined in the table because they are identical except to the addition of the "Others Control" scale to Version IV. Some of the analysis utilized combined Version III and IV samples; some did not.

TABLE 3

ANALYTIC PROCEDURES APPLIED TO VERSIONS I-IV
OF THE FUTURE ORIENTATIONS QUESTIONNAIRE

	Version I	Version II	Versions III-IV
Analysis of Scales	Inter-item correlations	Inter-item correlations Factor analysis	Factor analysis Scale test-retest correlations for various scale lengths Cronbach's alpha for various scale lengths
Analysis of Items	Item-to-scale correlations Frequency distribution of item responses with quartiles of overall score Correlation of items to scales other than assigned scales	Item-to-scale correlations corrected for length of scale Frequency distribution Factor loadings Correlation of items to scales other than assigned scales	Frequency distribution of item responses Item test-retest correlations Item to scale-minus item correlations Correlation of items to scales other than assigned scales

Results. Data pertaining to the final version (V) and selected data pertaining to Versions III and IV are presented in Chapter IV. Here, the modifications to scales and items which resulted from the preliminary data analysis for Versions I to IV are described. Both scale and item modifications are summarized in Table 4.

Scale modifications. Because of the small sample used to assess Version I, many of the inter-item correlations were not significant, but they did suggest several modifications which were explored in Version II. Future Is Knowable and Future Orientation Helps appeared to be potentially distinct from Future Orientation, and Volitive items referring to Fate appeared to be potentially distinct. Other scale changes between Versions I and II were additions of new concepts rather than modification or partitioning of Version I scales.

The analysis of Version II was complicated by the use of three short forms; for example, separate factor analyses of each form had to be conducted. However, the factor analyses and inter-item correlation matrix led to several substantial changes in the variables. Because these changes represented a key point in the development of the instrument, the post-hoc conceptualization of Version II receives a separate column in Table 4.

Three types of scale modification took place as a result of the Version II data: scales were either divided into several scales, renamed, or dropped from further study. As Table 4 indicates, all Version II scales were involved in one of these three types of modifications.

TABLE 4

REPRESENTATION OF SCALES IN VERSIONS

Number of items per scale / Scale (per Table 2)	Version: I	II a priori	II a posteriori	III	IV	V
1A Future Orientation	6	7	6	12	12	7
1B Future Is Knowable	-	4[b]	0[e]	-	-	-
1C Future Orientation Helps	-	4[b]	0[f]	-	-	-
1D Personalize	2	4	0[g]	-	-	-
1E Social Orientation	-	4[c]	0g	-	-	-
2 Planfulness	-	-	4[h]	12	12	9
3A Plural	6	4	0[i]	-	-	-
3B Option Seeking	-	-	2[i]	10	10	4
4A Volitive	18	7[d]	0[j]	-	-	-
4B Internal/Personal	-	-	2[k]	8	8	4
4C Internal/Societal	-	-	4[l]	4	4	3
4D Social Efficacy	2[a]	6	0[l]	-	-	-
4E Expectancy of Success	-	5	0[m]	-	-	-
5A Fate, Destiny	-	5[d]	3	6	6	5
5B Luck, Chance	-	-	2[n]	5	5	5
5C Random	-	-	4[e]	8	8	7
5D Others Control	-	3	0[o]	-	11	6
5E Acceptance	-	-	4[p]	10	10	4+4[v]
6 Future Anxiety	-	-	2[q]	6	6	4
7A Flexibility	-	3	0[r]	-	-	-
7B Open-mindedness	-	4	0[s]	-	-	-
8 Intended behavior	2	2	0	-	-	-
Filler items	-	-	-	-	12	6
TOTAL	36	62	33	81	104	68

TABLE 4 (continued)

Notes

a Internal Control of Societal Events (4C) was identified as Social Efficacy in Versions I and II, and was not clearly distinguished from Expectancy of Success.

b Future is Knowable (1B) and Future Orientation Helps (1C) devolved from Future Orientation (1A) in II.

c Social Orientation (1E) was distinguished from Personalize Future and Global Events (1D) in Version II.

d Volitive included items pertaining to both internal and external locus of control in Version I. Fate was isolated in Version II.

e Future is Knowable (1B) was reconceptualized as Random, Unpredictable, Unknowlable in the a posteriori reinterpretation of Version II scales.

f Future Orientation Helps (1C) was abandoned at the a posteriori analysis of Version II. Several items were reassigned, as noted below.

g Personalize (1D) and Social Orientation (1E) were dropped after analysis of Version II.

h Planfulness (2) emerged during analysis of Version II data from two Future Orientation items and one each from Future Orientation Helps (1C) and Volitive (4A).

i Plural (3A) was reconceptualized as Option-Seeking Behavior (3B) for reasons noted in the text.

j Volitive (4A) items were distributed among various internal (group 4) and external (group 5) scales, based on the analysis of Version II data.

k Internal/Personal (4B) was distinguished from Internal/Societal during the analysis of Version II.

l Social Efficacy (4D) was relabeled Internal Control of Societal Future Events (4C) during the analysis of Version II.

m Expectancy of Success (4E) was deleted during analysis of Version II.

n Luck/Chance (5B) was distinguished from Fate/Destiny (5A) during the analysis of Version II.

o Others Control (5D) was deleted from Version III.

p Acceptance (5E) emerged from the analysis of Version II and originally included three Volitive (4A) items and one Flexibility (7A) item.

q Future Anxiety (6) was based upon two Future Orientation Helps items (1C) during analysis of Version II.

r Flexibility (7A) and Open-mindedness (7B) were deleted from Version III.

s Intended Behavior (8) was deleted from Version III.

t Others Control (5D) was reinstated in Version IV, with items which are more future-directed than the Others Control items of Version II.

u Twelve items from the Rotter Internal/External Control scale were used as filler items and were intermixed with the Others Control items which were placed at the end of the instrument, leaving the other 81 items in the same positions in Version IV as in Version III.

v Factor analysis, described in Chapter IV, led to the partitioning of Acceptance into two scales, one labeled Concern.

w Six items retained in Version V were identified as weaker items and were dropped from the scoring of their respective scales.

Future Orientation, which had already been partitioned to distinguish Future Is Knowable and Future Orientation Helps, produced a third spin-off variable, labeled Planfulness. (Two of the intitial Planfulness items came from the Version II Future Orientation scale, one from Future Orientation Helps, and one from Volitive.) Volitive, from which the Fate scale had previously been extracted, was partitioned into Internal Control of Personal Future Events (4C) and Future Acceptance (5E). Fate/Destiny (5A) was itself partitioned to distinguish Luck/Chance (5B).

Future is Knowable (1B) was renamed in terms of its opposite, as Random/Unpredictable/Unknowable (5C) and grouped tentatively with other forms of externalization or avoidance of control. Plural (3A) was reconceptualized as Option-Seeking Behavior (3B) as defined earlier, on logical grounds as well as a weak empirical relationship among the items intended to measure this variable. (Two items were deleted and new items generated for Version III were directed toward the new conceptualization.) Social Efficacy (4B) was renamed Internal Control of Societal Future Events (4C). Two Future Orientation Helps (1C) items became the core of a new Future Anxiety scale (6).

The following scales were dropped because of weak inter-item correlation and/or lack of integrity in the factor analysis, and also because they were less central to the future activism concept: Future Orientation Helps (1C), Personalize (1D), Societal-Oriented (1E), Expectancy of Success (4E), Others Control (5D), Flexibility (7A), Open-Mindedness (7B), and Intended Behavior (8). This reduction in the number of component variables was motivated to a large extent by the desire for an instrument which could be completed in 15 or 20 minutes and which would have enough items per scale to provide reliable measures.

Version III scales were those which emerged from the Version II analysis, augmented by new items. Version IV also included a reinstated Others Control scale (5D) with entirely new items and a clear future orientation which the earlier Others Control items had not had. Factor analysis of all items and of the items assigned to each scale taken separately, for Versions III and IV, confirmed the integrity of the scales and the appropriateness of almost all assignments of items to

scales; these results are reported in the section on dimensionality of the final instrument in Chapter IV. The one exception was Future Acceptance, which, when its items were factored alone, showed two factors, one consistent with the concept as defined, and one reflecting lack of worry or concern. They are treated as distinct scales in Version V.

Test-retest correlation coefficients for Version III scales and Cronbach's alpha (coefficient of internal consistency) for Version III and IV scales were computed. For the most part they were acceptable (>.70), although the Cronbach alpha's for some scales were in the range of .50 to .60. The question of optimal scale length was addressed primarily by computing test-retest correlations and Cronbach alpha's for potential scales of varying numbers of items. The results of this analysis are reviewed as part of the item analysis discussion which follows.

Item modifications. In addition to the reassignment or deletion of entire groups of items (scales) described above, individual items were revised, reassigned to different scales, or deleted according to the results of analysis of preliminary data.

Based on the analysis of Version I items, some items were deleted and almost half, including nine Plante items, were revised. The standards for editing items, already stated, were utilized.

Analysis of Version II data led to the deletion of five items in addition to those which are part of scales which were dropped. These deletions were based primarily on weak item-to-item correlations and/or strong correlations with scales other than those to which they were assigned. Six Version II items were reassigned to different scales, in

addition to the eight scales which were renamed or reconceptualized. This occurred when inter-item correlations and/or item-to-scale correlations suggested revised item groupings for which there was some logical basis. These reassignments were, of course, reevaluated as part of the analysis of Versions III and IV.

Since this reassignment of items is a critical aspect of the clarification of concepts which took place during instrument development, several examples will be presented. "By and large, the future cannot be changed" is a revised wording of Plante's item 10 ("I believe that, by and large, the future cannot change and that very little is possible"). It had been designated as a Plural item for the Version I and II analyses but was actually found to correlate more strongly with the Social Efficacy items and was reassigned with them to the new Internal Control of Societal Future Events scale. "Sometimes the best strategy is to 'go with the flow' of things" had been designated as a Flexibility item. However, it correlated more strongly with three former Volitive items which formed the core of the new Future-Acceptance scale. "I believe that planning is essential for making things come about" had been considered a Volative item, but grouped empirically with the Future Orientation items which formed the new Planfulness scale.

Item analysis of Versions III/IV led to the deletion of 24 items and the identification of six items retained in Version V as filler items. Items were screened for adequate frequency distribution--i.e., no more than 90% of the responses should be either agree-strongly agree or disagree-strongly disagree. Items were also screened for low item

test-retest reliability (less than .30). One item, numbered 52 in the final version, was reassigned from Future Orientation to Plural. However, the primary objective of this final item selection process was to optimize the internal consistency of the scales without impairing scale test-retest reliability coefficients. Cronbach's alpha was computed for scales of varying length (deleting various combinations of items with low item-to-scale correlations). The test-retest correlations and Cronbach alpha's of the Verison V scales are presented in the Reliabilty and Internal Consistency section of Chapter IV.

The scales of Version V are listed and defined in Chapter IV. The final instrument appears as Appendix A.

CHAPTER IV

INSTRUMENT PROPERTIES: METHODOLOGY AND FINDINGS REGARDING THE FINAL VERSION

Overview of Methods for Assessing Dimensionality, Reliability, Validity, and Generalizability

The product of the instrument development process described in Chapter III is Version V of the instrument, a 68-item Likert scaled Future Orientations Questionnaire. The instrument is scored in terms of 12 scales intended to measure variables identified as components of future activism. This final instrument is presented as Appendix A.

This chapter describes methods and findings pertaining to this final instrument. Four fundamental issues were addressed by the research: dimensionality of the instrument, reliability, validity, and possible relationships with selected demographic variables.

The dimensional structure of the instrument was examined using both exploratory and confirmatory factor analysis techniques. The primary concern was to determine whether the framework embodied in the 12 scales is consistent with the empirical structure of the instrument. Two secondary concerns were also addressed through factor analysis: the factorial integrity of the individual scales and the relationship among the 12 scales.

Two aspects of reliability were assessed: internal consistency and stability over time. Cronbach's alpha (Mehrens and Ebel, 1967) and the test-retest procedure were utilized.

Several aspects of validity were explored. Hypotheses of convergence and divergence with six known instruments were examined. Expected correlations with behavioral indicators and expected differences between known groups were evaluated.

Finally, possible demographic effects were assessed by examining correlations between scale scores and selected demographic variables. Age, sex, race, and income level was considered.

Instruments. Although Version V was the primary focus of the data analysis described here, some relevant data were available from the preliminary analysis of Versions III and IV. Version IV contains all the items of the final instrument and Version III contains all except the Others Control items; it was therefore possible to extract Version V scores from Versions III and IV. This was done with the reservation that differences in the item sequences between Versions III/IV and Version V might influence some or all of the items, and that this context effect limits the comparability of the versions.

Subjects. The psychology department, futures conference ("Unlearning the Twentieth Century"), and alumni conference samples and sampling procedures have already been described in Chapter III. In the present chapter, they will be referenced by the short names, Psychology, Futures, and Alumni, for convenience.

Dimensionality of Future Activism

Of the variables considered as possible components of future activism (see Table 2 and accompanying narrative in Chapter III), 11 were included in Version V: Future Orientation, Planfulness, Option-Seeking Behavior, Internal/Social, Internal/Personal, Luck, Fate, Random, Acceptance, Others Control, and Future Anxiety (see Table 4). The present section reviews empirical findings regarding this proposed internal structure of future activism and the instrument. These findings address four hypotheses:

Dimensionality Hypothesis D1--Future activism, as measured by the Future Orientations Questionnaire, is a multi-dimensional construct.

Dimensionality Hypothesis D2--The factor structure of the Future Orientations Questionnaire corresponds to the 11 scales of the instrument (which were derived from the 11 component variables, defined above).

Dimensionality Hypothesis D3--Each scale of the Future Orientations Questionnaire is uni-dimensional.

Dimensionality Hypothesis D4--The scales of the Future Orientations Questionnaire will show the following relationship:

a) The three scales which are concerned with thought about the future (Future Orientation, Planfulness, and Option Seeking) will be associated with each other more strongly than with the other scales.

b) The two scales concerned with internal control of future events (Internal/Societal and Internal/Personal) will be associated more strongly with each other than with the other scales.

c) The five scales concerned with external control of future events (Acceptance, Fate, Luck, Random, and Others Control) will be associated more strongly with each other than with the other scales. Future Anxiety will not be associated strongly with any other scale.

Hypotheses D1 and D3 reflect the same methodological assumptions that guided instrument development: that future activism is a concept of sufficient complexity that a multi-dimensional instrument should be expected and sought, and that the scales by which the instrument is scored should be substantiated empirically as well as logically or semantically. Each scale should be identifiable empirically (through factor analysis) and should itself be uni-dimensional.

Hypothesis D2 states expectations based on analysis of preliminary versions of the instrument: that the number of empirically based, uni-dimensional scales will be 11, and that these will correspond to the 11 scales previously identified. Hypothesis D4 is based on a desire to provide a simpler conceptual framework as a convenience in utilizing an instrument with approximately 11 scales. The proposed groupings of scales reflect conceptual considerations; empirical support for this structure is sought.

Procedure. Of the subject groups described above, three were used in tests of the hypotheses about the dimensionality of the instrument: (1) the 246 subjects from the Psychology group, who received Version III of the instrument in December, 1979; (2) 66 people from the Futures Conference group, who completed Version IV of the instrument in November, 1980; (3) 40 people from the Alumni Conference group, who received Version V of the instrument in May, 1981. The instrument is self-administering; in all cases subjects were handed the questionnaire and read for themselves the instructions printed on it.

Results. In order to test hypotheses D1 and D2, the items of Version V were factor analyzed for each of the three subject pools listed above. The principle factors method without iteration was used with an oblique rotation. Table 5 shows the number of factors for each subject pool which surpassed Kaiser's criterion (Eigenvalue greater than one) and also the number of factors indicated by a scree test (Childs, 1970, p. 44; Cattell, 1966, pp. 174-223).

TABLE 5

NUMBER OF FACTORS EXTRACTED BY PRINCIPLE FACTORS METHOD FROM FUTURE ORIENTATIONS QUESTIONNAIRE

Subject Pool:	Psychology Department N=246	Futures Conference N=66	Alumni Conference N=40
# of factors per Kaiser's criterion:	15	18	17
# of factors per screen test:	9 or 12	11 or 12	12 or 14

These findings confirm hypothesis D1: Future Activism, as measured by the Future Orientations Questionnaire, is a multi-dimensional construct.

Hypothesis D2 was evaluated first by principal factors with oblique rotation of the combined psychology and future conference samples. The rationale for an oblique rotation was that the factors, if they were to have any prospect of corresponding to the instrument's scales, would need to be free from the constraint of orthogonality. The rationales for combining the two samples were (a) that the more heterogeneous (combined) sample would have a better prospect of demonstrating the true factor structure of a broader population, and (b) the greater number of subjects was preferable considering the number of items. Only those items which were scores in Version V were included in the factor analysis. However, the Others Control scale was omitted from the analysis because its items were not included in Version III, which was used by the psychology subjects.

The result was a very strong confirmation of hypothesis D2: the factors identified by this empirical method were extremely consistent with the scales previously identified. The number of factors to be extracted was set at ten on the basis of a scree test; after rotation, each of these ten factors could be identified with one of the scales (excluding Others Control and considering Acceptance and Concern as one scale). Only three items out of 57 had factor structure matrix loadings with absolute values less than .30. Only eight items had loadings on an "inappropriate" factor which were higher than those on the appropriate factor; these items are indicated by footnotes to Table 6. For six of

TABLE 6

FACTOR LOADINGS AND ITEM TO SCALE-MINUS-ITEM CORRELATIONS FOR VERSION V SCALES

Scale: Future Orientation

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
41	I don't often wonder about the future. (R)*	.62	.72
54	I often think about what the future will be like.	.61	.76
11	I spend a lot of time imagining what the future will be like for me.	.52	.65
3	I rarely think about what I'll be doing ten years from now. (R)	.51	.60
30	I often think about how much the world will change during the course of my lifetime.	.40	.62
48	Thinking about the future isn't very helpful to me.	.43	.44
13	I don't like to think about the future.	.46	.47[a]

[a]Item #13 attained a factor structure loading of .50 on the factor identified with Option-Seeking Behavior. Its loading on Future Orientation was its second-ranking loading.

*(R) indicates which are worded such that their scores must be reversed.

TABLE 6 (continued)

Scale: Planfulness

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
23	I'm the kind of person who plans ahead most of the time.	.57	.66
51	The time I spend planning really pays off.	.52	.44
15	I have a clear idea of what I want to be doing with my life five years from now.	.48	.53
4	I believe that planning is necessary to make things turn out the way I want.	.46	.61
63	I've got some very specific ideas about how I want to spend my life.	.46	.54
1	I have a lot of detailed plans for the future.	.45	.51
61	I rarely plan how I will spend my time. (R)	.45	.61
39	I often make a list of things I need to do.	.29	.57
52	I really don't have any idea about what my future will be like. (R)	.51	.44

TABLE 6 (continued)

Scale: Option Seeking

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
29	I believe that many career alternatives exist for me.	.42	.52
44	The possibilities for the future are virtually unlimited.	.38	.62
20	The future is "open" and many outcomes are possible.	.33	.56
68	Before I make an important decision, I like to consider all the options.	.38	.50

Scale: Internal (Societal)

47	There's very little we can do to keep prices from going higher and higher. (R)	.36	.65
60	There's very little we can do to bring about a permanent world peace. (R)	.26	.58
34	The average citizen can have an influence on government decisions.	.26	.52

TABLE 6 (continued)

Scale: Internal Control of Personal Future Events

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
49	My future will be primarily shaped by forces outside of my control. (R)	.60	.55
35	What happens to me in the future depends, more than anything else, on the choices I make.	.54	.18[b]
50	Most things which will happen to me will be because of what I do (or do not do).	.56	.55
27	I don't think I will have much control over how my life turns out. (R)	.44	.57
59	I don't think that people have much control over what happens to them. (R)		.55

[b]Item #35 attained a factor structure loading of .63 on the factor identified with Option-Seeking Behavior. Its loading on Internal/Personal was its fourth-ranking loading.

TABLE 6 (continued)

Scale: Others Control

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
9	The future will be shaped by the few people who occupy positions of power. (R)	(no data)	(no data)
25	Compared to our government and the large corporations, the public has little control over the future. (R)		
12	My future will be shaped, to a great extent, by the decisions of powerful people. (R)		
37	Only a few people are really in a position to do something about world peace. (R)		
5	The quality of life in the year 2000 will be shaped by the decisions of a small number of leaders. (R)		
46	How the energy crisis will be resolved is up to a fairly small number of decision makers. (R)		

TABLE 6 (continued)

Scale: Luck, Chance

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
66	Luck has a lot to do with the outcome of events. (R)	.65	.73
7	Many things which happen to me are because of chance. (R)	.58	.75
14	I believe that luck has a lot to do with the good things that have happened to me. (R)	.58	.70
64	A lot that happens to me seems accidental. (R)	.49	.64
21	Some people seem to be very unlucky. (R)	.44	.71

TABLE 6 (continued)

Scale: Fate, Destiny

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
31	Many things happen because they are fated or predetermined. (R)	.60	.70
43	I really think that life is meant to be the way is is. (R)	.36	.58
24	I believe that my life is willed and guided by a special force or being. (R)	.57	.71
45	I do believe in fate. (R)	.53	.70
62	I do not believe that there is a destiny with my life.	.46	.70

TABLE 6 (continued)

Scale: Random, Unpredictable, Unknowable

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
56	Life is very unpredictable. (R)	.60	.53
65	The future is basically unpredictable. (R)	.47	.40
38	I don't think that one can find reasons why life is the way it is. (R)	.45	.66
33	I can't really explain why my life is the way it is. (R)	.48	.62
53	Most events occur by surprise with little forewarning. (R)	.46	.66
28	I'm often very surprised by what happens to me. (R)	.41	.59
57	We know so little about life in 1990 that it is impossible to plan that far ahead. (R)	.36	.37[c]

[c]Item #57 also attained a factor structure loading of .37 on the factor identified with Planfulness. Random was the second-ranking factor loading for this item.

TABLE 6 (continued)

Scale: Acceptance

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
2	Sometimes the best strategy is to "go with the flow" of things. (R)	.33	.35[d]
10	Most problems will take care of themselves if you don't fool with them. (R)	.38	.38[e]
19	Often when people fail at what they do, it's because of trying too hard. (R)	.17	.25[f]
58	Time itself is the best solution to a lot of problems. (R)	.28	.12[g]

[d]Item #2 attained a factor structure loading of .37 on the factor identified with Luck. Its loading on Acceptance was its second-ranking loading.

[e]Item #10 attained a factor structure loading of .44 on the factor identified with Random. Its loading on Acceptance was its second-ranking loading.

[f]Item #19 attained a factor structure loading of .40 on the factor identified with Random. Its loading on Acceptance was its second-ranking loading.

[g]Item #58 attained a factor structure loading of .52 on the factor identified with Fate. Its loading on Acceptance was its second-ranking loading.

TABLE 6 (continued)

Scale: Concern

Item	Wording	Correlation with Scale-Minus-Item (Psychology)	Factor Structure Loading (Psychology + Futures)
36	I live each date as it comes without concerning myself about tomorrow. (R)	.40	.53
6	I rarely let things bother me. (R)	.53	.68
67	I'm the kind of person who lets most things roll off my back. (R)	.39	.67
16	I don't have any trouble accepting those things which I cannot change. (R)	.30	.43

Scale: Future Anxiety

22	Thinking about the future often makes me upset.	.67	.81
17	I worry a lot about the future.	.51	.69
8	Thinking about the future makes me very anxious.	.52	.69
42	Thinking about the future makes me more fearful than hopeful.	.45	.73

the eight, the appropriate factor attained the second highest loading for that item.

Table 6 lists Version V item numbers and wordings for each scale, and the following statistics: factor structure matrix loadings for the principal factors analysis with oblique rotation of Version V items from the combined psychology-futures conference samples, and item to scale-minus-item correlations for the psychology subjects.

There is a weakness in this procedure: item to scale-minus-item correlations for the combined psychology and futures conference samples were used as one criterion among several to select the Version III and IV items from each scale which would be retained in Version V. The factor analysis was performed after the item selection, but since it is based on the inter-item correlation matrix, it is not altogether surprising that scales revised on correlational grounds should be confirmed by a factor analysis of the same data on which the revisions were based. It was, therefore, essential to examine other data using the same factor analysis approach.

A principal factors analysis with oblique rotation was performed for each of three samples: psychology and futures conference, considered separately, and alumni. The value of this analysis procedure was limited because the psychology and futures conference subjects were the same ones whose responses had already been analyzed in the factor analysis just described, and also by the fact that two of the samples were of a size considerably smaller than one would desire for a factor

analysis of approximately 60 items (futures conference, N=66; alumni conference, N=40).

The results for these single-sample factor analyses did not provide as clear a confirmation of Hypothessis D2 as did the previously described factor analysis. Twelve factors were extracted in each analysis; this number was justified on the basis of a scree test. The Acceptance scale did not appear as a clear factor in any of the analyses. The items of Future Orientation and Planfulness appeared on one factor for the alumni sample, and were divided between two factors but differently than in the scales for the futures conference sample. Random did not appear as an identifiable factor for the psychology sample; Future Anxiety did not appear as a futures conference factor. For the alumni sample, Luck appeared on the same factor with Random, and Concern on the same factor with Option Seeking. There were individual items which did not appear on the same factor with the other items of their scales than on the first (psychology-futures conference) factor analysis. However, no single item had a structure matrix loading with absolute value less than .40 on the "appropriate" scale for all three single-sample factor analyses.

These analyses indicate that the factor structure of the Future Orientations Questionnaire may be sample-specific. It would be desirable to administer the instrument to a representative sample of American adults, in order to provide a more solid basis for statements about its factor structure.

Hypothesis D3, regarding the dimensionality of individual scales, is made more credible by the moderately strong indices of internal consistency (Cronbach's alpha) reported below under the heading, "Reliability." Only Option Seeking, Internal/Societal, and Acceptance show questionable internal consistency for these samples, based on the alpha statistic.

Further evidence regarding Hypothesis D3 was provided by factoring the items of each scale separately and examining the number of factors identified. The combined psychology and futures conference samples were used for this test. Using Kaiser's criterion (retaining factors with eigenvalues greater than one), only two scales--Planfulness and Acceptance--had two factors; the rest had only one. It was this analysis which led to dividing Future Acceptance into Concern, which is typified by lack of concern for the future, and Acceptance, which is typified by a choice of inaction as a response to situations. The division of Planfulness items into two groups was not supported by any other data, so Planfulness was retained as a single scale. With these two exceptions, Hypothesis D3 was supported: the scales of the Future Orientations Questionnaire are uni-dimensional.

In order to examine the relationships among the scales postulated in Hypothesis D4, an additional factor analysis was performed for each sample using scale scores as variables. Four factors were extracted from each analysis of scales, again using Kaiser's criterion. An oblique rotation was used for the same reason as before: an expectation

that the postulated scales would not be independent from (orthogonal to) each other.

A factor involving thought about the future emerged for each sample. For the alumni and futures conference samples, this factor included Future Orientation, Planfulness, and Option Seeking, as postulated. For the futures sample, Random also attained a high structure matrix loading (.52) on this factor, higher than that for Option Seeking. The psychology sample showed Future Orientation and Planfulness loading strongly on the same factor, with Option Seeking weak (loading, .33) and Fate stronger than Option Seeking.

For the alumni and futures conference samples, Internal/Societal and Others Control loaded strongly on the same factor. Internal/Personal and Luck also appeared on that same factor for the futures sample. For the psychology sample, Internal/Societal loaded only weakly on a factor for which Internal/Personal, Option Seeking, and Fate attained the highest loadings, in that order. Others Control items did not appear on the version administered to psychology subjects.

The Luck, Fate, Random, and Acceptance scales loaded strongly on the same factor. For the futures conference sample, Internal/Personal loaded moderately on the same factor, but not higher than any of the other four scales.

Concern and Future Anxiety loaded strongly on the same factor for all three samples. Only for the alumni sample, Option Seeking and Internal/Personal loaded strongly on that same factor.

These findings must be interpreted somewhat cautiously because of the distinctive features of the three samples, and because of the small sample sizes for the alumni and futures conference groups. However, a plausible grouping of scales, consistent with the available data and easily interpretable as well, can be identified; it is shown as Table 7. The table includes convenient labels for the four clusters of scales: anticipation, control, avoidance, and apprehension.

TABLE 7

GROUPINGS OF SCALES SUGGESTED BY FACTOR ANALYSIS OF SCALE SCORES

Group 1:	Anticipation
	- Future Orientation
	- Planfulness
	- Option Seeking Behavior
Group 2:	Control
	- Internal Control of Societal Future Events
	- Internal Control of Personal Future Events
	- Powerful Others Control Future Outcomes
Group 3:	Avoidance (of Control)
	- Fate, Destiny Shape the Future
	- Luck, Chance Shape the Future
	- The Future is Random, Unpredictable, Unknowable
	- Acceptance
Group 4:	Apprehension
	- Concern
	- Future Anxiety

Thus, the empirical findings confirm hypothesis D4 in modified form. There is consistency in the factor structure of scale scores among the samples; although there are minor differences among the samples, the groupings presented in Table 7 indicate a structure which is empirically justifiable and also logically comprehensible.

The existence of such groupings of scales raises the possibility that fewer scales could adequately represent the future activism concepts embodied in the Future Orientations Questionnaire. Further research may indicate that this is so. However, there is evidence to the contrary in the form of the number of factors extracted from the analysis of individual items (Table 5). Furthermore, distinguishing such concepts as Internal/Personal from Internal/Societal or Luck from Fate and Random has potential utility in terms of several possible applications of the instrument, including research and educational diagnosis. Until further research indicates otherwise, the instrument will be scored in terms of 12 scales, not four groupings or one overall future activism score.

Reliability

Two approaches to the assessment of reliability were utilized: the test-retest method and internal consistency as measured by Cronbach's alpha. Both approaches were utilized in the instrument development process, as discussed in Chapter III. Test-retest data is available only for Version III; the alpha statistic was computed for Versions III, IV, and V.

Test-retest reliability. Version III was administered to the Psychology sample, and was readministered to 46 subjects six or seven days later. The shorter Version V scales were extracted from Version III for every scale except Others Control, which was not included in Version III. Test-retest correlations range from .72 to .89 (see Table 8). These findings suggest that from the standpoint of stability over a short time interval, the instrument is acceptable for research uses and intergroup comparisons, and for individual educational diagnostic use with appropriate caution, but not for more sensitive uses such as individual placement. This is, of course, consistent with the intended uses of the instrument as stated in Chapter I.

TABLE 8

TEST-RETEST CORRELATIONS FOR VERSION V SCALES

Scale	Sample (Items)	Psychology $r_{t.r}$***	N
Future Orientation (7)		.89	40
Planfulness (8)		.84	40
Option Seeking (4)		.74	41
Internal/Societal (3)		.72	40
Internal/Personal (4)		.80	42
Others Control (6)		-	-
Fate (5)		.78	41
Luck (5)		.85	41
Random (7)		.85	39
Acceptance (4)		.79	41
Concern (4)		.73	41
Future Anxiety (4)		.82	41

***All are significant at $p<.002$

Internal consistency. Cronbach's alpha, an indicator of internal consistency, was computed for the Version V scales for the psychology, futures conference, and alumni samples. For subjects who completed the instrument more than once, only the first administration was included. The precaution about computing Version V scales from Versions III and IV, stated earlier, applies here as well.

The findings regarding internal consistency are shown in Table 9. Most of the alpha's are above .75. Four scales show consistently weaker alpha's: Option Seeking, Internal/Societal, Concern, and Acceptance. These are among the shortest scales of the instrument. Also, the first three were the only scales with test-retest correlations less than .75. Acceptance showed another weakness: each of its items had a higher factor loading on some other scale than on Acceptance itself. Therefore, if any further item development is ever undertaken, it should be directed especially toward strengthening these four scales. Given the available items, scores on these scales should be interpreted more cautiously than the others.

The Cronbach alpha statistic for the remaining eight scales is in an acceptable range. These findings support the test-retest that from the standpoint of reliability the instrument is acceptable for research uses, intergroup comparisons, and, with caution, individual educational diagnostic use. Such sensitive uses as individual placement are not appropriate at this stage in instrument development.

TABLE 9

CRONBACH'S ALPHA FOR VERSION V (SHORT) SCALES

Sample: N:	Psychology 246	Futures Conference 66	Alumni Conference 40
Scale (# items)			
Future Orienation (7)	.779 241	.819 62	.851 40
Planfulness (8)	.764 240	.803 63	.844 40
Option Seeking (4)	.591 242	.500 63	.463 40
Internal/Societal (3)	.468 244	.528 63	.618 40
Internal/Personal (4)	.737 246	.753 63	.631 40
Others Control (6)	-	.849 61	.763 40
Luck (5)	.775 243	.886 63	.783 39
Fate (5)	.742 241	.769 63	.757 40
Random (7)	.748 241	.793 62	.814 39
Acceptance (4)	.501 237	.535 60	.744 39
Concern (4)	.622 237	.585 60	.716 39
Future Anxiety (4)	.742 244	.823 63	.814 39

Validity

Theoretical Considerations and Methods. The preceding sections of this chapter have demonstrated that the Future Orientations Questionnaire generates patterns of behavior which have structural integrity and stability over time. The task of demonstrating validity is, of course, the task of verifying or substantiating the interpretations placed on those systematic questionnaire-completion behaviors. As Messick (1980) points out, there are many aspects of validity and many posssible validation strategies. An optimal validation strategy is one which lends the most support to the proposed interpretation of the empirical observations for the effort expended. Ideally, this will include a defense of the proposed interpretation relative to possible alternative explanations (rival hypotheses).

Several distinct validation procedures were used in the present study. They are previewed here under a conceptual framework presented by Brown (1970, pp. 145-151) which consists of five categories: (1) intratest methods, (2) intertest methods, (3) criterion-related studies, (4) experimental manipulation, and (5) generalizability studies. Procedures used in the present study encompassed all but the fourth type.

Intratest methods are those used to study the relationships between items and between subtests. Brown includes factor analysis, internal consistency coefficients, and other indicators of the internal structure of the instrument as intratest evidence of construct validity. The existence of 12 subscales within the Future Orientations Questionnaire results in data of this type. Factor analysis, internal

consistency, and inter-item correlations are available. However, this data must be interpreted cautiously since it is, in effect, an attempt to validate a particular scale by comparison with other unvalidated scales. Additional methods are definitely necessary.

Intertest methods consist primarily of studies of the correlation between the instrument in question and others presumed to be either similar or dissimilar. The multitrait-multimethod matrix approach of Campbell and Fiske (1959) stands as an ideal intertest method. Its requirement that each of several traits be measured by each of several methods is often difficult to achieve; in the present study, measures of a virtually identical trait were identified for only two of the scales (Planfulness and Fate), but the multitrait-multimethod approach would further require that the same pair of methods be used to assess each of two (or more) traits. In addition, methods as diverse as possible are to be preferred over similar methods (such as exclusively paper-and-pencil methods). These stipulations were not feasible to achieve; however, it is instructive to consider the intertest results which are obtained in a particular case as part of an incomplete multitrait-multimethod matrix. This serves as a precaution against overlooking possible method effects and a reminder of the importance of establishing divergent distinctiveness as well as convergence.

Campbell (1960) distinguishes two categories of construct validity: nomological validity and trait validity. The former approach was originated by Cronbach and Meehl (1955), who advocated that a trait should be linked with a theoretical framework--a nomological network--

and that trait and theoretical network should be validated together. Campbell (1960, p. 547) contends that this approach is more complex than is often required; Selltiz et al. (1976, p. 176) point out that in many areas of investigation there may be a lack of an adequate theoretical framework in which to ground nomological studies. Messick (1980, p. 1016) uses the phrase, nomological validity (or nomological relatedness), in a less demanding way. In his terminology, nomological relatedness is demonstrated by empirical consistencies between constructs presumed to be related on theoretical grounds, whereas trait validity (or trait correspondence) is demonstrated by empirical consistencies between different methods of measuring the same trait.

Selltiz et al. (1976, p. 179) indicate that when a multi-faceted concept has been operationalized as several distinct measures, the appropriateness of this choice can be examined by determining whether the distinct concepts do actually differ in their relationships to other concepts. This can be determined through the use of correlational or factor-analytic intertest techniques. In the present case, differences in correlational patterns between the FOQ subscales and other measures augment the evidence for the distinctiveness of the subscales already presented in the Dimensionality section of this chapter.

In the present study, intertest methods were selected as the primary focus of validation efforts. However, the existence of 12 subscales within the instrument makes intertest validation a complex task and places practical limits on the extent to which this aspect of validity could be explored within the present study. Hypotheses pertaining

to both convergence and divergence were generated. The convergence hypotheses are of four types:

Hypotheses based on trait identity: a high correlation is expected between one of the FOQ scales and the same variable measured by a different instrument. Hypotheses of this type are identified by a number bearing the prefix V1.

Hypotheses based on trait similarity: an expectation of moderately high correlation with similar variables, including variables with a similar definition but not limited to future time. These bear the prefix V2.

Hypotheses based on domain similarity: an expectation of moderate correlation between variables which have some overlap in their content domain, although they are not identified by the same variable name. These bear the prefix V3.

Hypotheses based on nomological relatedness: an expectation of moderate or moderately high correlations between variables on theoretical grounds. These bear the prefix V4.

In addition to these four types of hypothesis, two types of divergence hypotheses were developed:

Hypotheses which attempt to discredit rival interpretations of the FOQ scales: an expectation of low (insignificant) correlations between FOQ scales and variables which represent alternative interpretations of the FOQ data. These bear the prefix V5.

Hypotheses of divergence in the absence of trait or nomological relationships which would suggest convergence. In general, these hypotheses involve a known instrument for which convergence was expected with some but not all of the FOQ scales. They are identified as group V6.

Criterion-related studies, sometimes categorized as practical validation, are often identified as distinct approaches to validation. However, as Messick (1980) argues, validation cannot be divided into separate categories; different methods represent different aspects of the overall question of validity. Furthermore, all of these aspects are relevant in establishing the construct validity of an instrument.

Criteria for such studies may consist of behaviors, performance levels, or membership in "known groups." Membership in voluntary groups is, in effect, a behavioral criterion itself.

Because of the time frame of the present study, it was not feasible to undertake studies of the predictive utility or validity of the FOQ; only criterion-related questions of a concurrent nature were posed. These were of two types:

Validity Hyopthesis Group V7: a positive correlation with behaviors which serve as criterion variables.

Validity Hypothesis Group V8: a significant difference between FOQ scores of individuals whose participation in a particular group is an indicator of future activism, and persons who are not members of such groups (concurrent validity; known groups technique).

The final approach to validation, generalizability studies, deals with the range or limitations of applicability of the constructs. This includes investigation of possible instrument bias relative to demographic variables. Because of the special importance of this topic, it is treated separately in the final section of this chapter, which also includes exploration of certain hypothesized demographic correlates of the variables.

Intratest Methods. Coefficients of internal consistency (Cronbach's alpha) and factor analysis results have been presented earlier in this chapter. By confirming the integrity and consistency of scales which were identified at least in part on logical or semantic grounds, they lend credence to the proposed constructs as empirically grounded phenomena. However, given the considerable role that empirical findings played in the refinement of the scales, the argument is somewhat circular. Furthermore, as mentioned above, intratest methods in general have the weakness that they consist of using one unvalidated instrument to

validate another. The support which these methods lend is only preliminary.

The validation of component constructs as distinct--mentioned above as an intertest method--also has an intratest aspect. The table of interscale correlations from the psychology sample (Table 10) lends weak support to the argument that the 12 scales of the FOQ should be treated as distinct. No two scales have identical patterns of significance. The similarities are consistent with the groupings of variables already presented: Future Orientation and Planfulness have similar patterns of correlation to the other ten scales; Luck, Random, and Acceptance have similar patterns. Again, there is an element of circularity in this argument. Table 10 is the correlation matrix from which the factor analysis of psychology sample scales was derived; that analysis provided confirmation of the item groupings. Nonetheless, this interscale correlation matrix does lend weak support for the distinctiveness of the scales.

Intertest methods. Five instruments were selected primarily for the purpose of demonstrating convergent validity (hypothesis types V1 to V4, above): Rotter's Internal/External Control Scale, Taylor's Manifest Anxiety Scale, the Calabresi-Cohen Time Attitude Scales, Heimberg's Future Time Perspective Inventory, and Clifton's Planning Intentions scale. These instruments were also used to assess divergence in the sense of hypothesis type V6, above. One instrument, the McClosky Conservatism scale, was selected as a measure of a rival hypothesis (type V5).

TABLE 10

INTERSCALE CORRELATIONS FOR THE 12 FUTURE ORIENTATIONS QUESTIONNAIRE SCALES, PSYCHOLOGY DEPARTMENT SAMPLE

Pearson Correlation (N of subjects)	Future Orientation	Planfulness	Option-Seeking Behavior
Future Orientation	-	.58*** (235)	.23*** (238)
Planfulness	.58*** (235)	-	.24*** (238)
Option-Seeking Behavior	.23*** (238)	.24*** (237)	-
Internal/ Societal	.11* (239)	.20*** (238)	.13* (240)
Internal/ Personal	.36*** (241)	.42*** (239)	.35*** (242)
Others Control	-	-	-
Luck	.15** (239)	.24*** (238)	-.05 (240)
Fate	-.07 (236)	.02 (236)	.05 (238)
Random	.26*** (236)	.35*** (236)	.10 (238)
Acceptance	.17** (234)	.23*** (234)	-.03 (236)
Concern	.22*** (238)	.21*** (238)	.03 (240)
Future Anxiety	.04 (240)	-.01 (238)	-.10 (241)

* $p < .05$ ** $p < .01$ *** $p < .002$

TABLE 10 (continued)

Pearson Correlation (N of subjects)	Internal/ Societal	Internal/ Personal	Luck	Fate
Future Orientation	.11* (239)	.34*** (241)	.15** (239)	-.08 (236)
Planfulness	.20*** (238)	.42*** (239)	.24*** (238)	.02 (236)
Option-Seeking Behavior	.13* (240)	.35*** (242)	-.05 (240)	.05 (238)
Internal/ Societal	-	.21*** (244)	.22*** (242)	.04 (240)
Internal/ Personal	.21*** (244)	-	.19*** (243)	.35*** (241)
Others Control	-	-	-	-
Luck	.22*** (242)	.19*** (243)	-	.31*** (239)
Fate	.04 (240)	.35*** (241)	.31*** (239)	-
Random	.20 (241)	.41*** (241)	.59*** (239)	.38*** (238)
Acceptance	.12* (237)	.15* (238)	.36*** (237)	.28*** (235)
Concern	.08 (241)	.21*** (242)	.06 (241)	.05 (239)
Future Anxiety	-.04 (243)	-.09 (244)	-.23*** (242)	-.15 (239)

* $p < .05$ ** $p < .01$ *** $p < .002$

TABLE 10 (continued)

Pearson Correlation (N of subjects)	Random	Acceptance	Concern	Future Anxiety
Future Orientation	.26*** (236)	.17** (234)	.22*** (238)	.04 (240)
Planfulness	.35*** (236)	.23*** (234)	.21*** (238)	-.01 (238)
Option-Seeking Behavior	.10 (238)	-.03 (235)	.03 (240)	-.10 (241)
Internal/ Societal	.20*** (241)	.12* (237)	.08 (241)	-.04 (243)
Internal/ Personal	.41*** (241)	.15* (238)	.21*** (242)	-.09 (244)
Others Control	-	-	-	-
Luck	.59*** (239)	.36*** (237)	.06 (241)	-.23*** (242)
Fate	.38*** (238)	.28*** (235)	.05 (239)	-.15** (239)
Random	-	.42*** (235)	.13* (239)	-.23*** (240)
Acceptance	.42*** (235)	-	.21*** (237)	-.07 (237)
Concern	.13* (239)	.21*** (237)	-	.29*** (241)
Future Anxiety	-.23*** (240)	-.07 (237)	.29*** (241)	-

* $p < .05$ ** $p < .01$ *** $p < .002$

Selection of these instruments was guided by a desire to demonstrate both convergent and divergent validity as efficiently as possible, for as many as possible of the 12 FOQ scales. Primary emphasis in selection was placed on instruments with the potential to demonstrate convergent validity for one or more of the scales, rather than divergent validity, since the theoretical framework surrounding the proposed constructs is not sufficiently developed to draw decisive conclusions about the specific rival interpretations which deserve to be tested. Preference was given to instruments with established validity and reliability. However, since instruments designed to measure similar or related concepts to those proposed here have not, for the most part, found wide use, it was necessary to accept instruments with minimal prior documentation.

The Rotter and Taylor instruments were administered to the Psychology Retest group; the remaining four were administered to the Alumni sample. These comparison instruments were placed after the Future Orientations Questionnaire items in each case. The Latin-squares approach to controlling contextual or sequence effects was considered and rejected, for several reasons: minimizing context effects on the new instrument, the FOQ, was considered a priority; although the sequence of the other instruments could have been rotated, a statistical test of sequence effects would have been of limited usefulness because of the small sample sizes; typing, duplicating, and return mail expenses would have increased substantially.

In the following presentation, a description of each instrument is followed by a discussion and summary of hypotheses which involve that

instrument, then a review of data pertaining to those hypotheses. Table 11 gives means, standard deviations, and Cronbach alpha coefficients for each scale of the six comparison instruments. Table 12 presents correlation coefficients and significance levels for all comparisons between FOQ scales and known instrument scales, referenced to the text by their hypothesis numbers.

Internal-External Control Scale. Rotter's Internal-External Control Scale (1966) has been discussed in Chapter II. It is a 29-item forced-choice questionnaire. Each pair of items contains one statement intended to be representative of an internal control perspective and one representative of an external control perspective. For the present study, Collins' (1976) procedure was used: the original scale was converted to 46 separate statements; the filler items were deleted and a five-point Likert scale was used. External item responses were reversed before averaging so that one overall score was produced with 1.0 representing the internal extreme and 5.0 the external extreme.

Convergence with the control scales of the FOQ (Internal Control of Societal Future Events, Internal Control of Personal Future Events, and Powerful Others Control Future Events) and with the avoidance (externalizing) scales (Luck, Fate, Random, and Acceptance) was expected. Rotter's locus of control concept had been influential in the development of these concepts. There is a similarity between items of the FOQ and items of the IE scale. Because the seven FOQ scales are expressly future-directed (which the Rotter instrument is not) and because the FOQ scales represent specific concepts which are

TABLE 11

MEANS, STANDARD DEVIATIONS, POSSIBLE RANGES, AND CRONBACH ALPHA COEFFICIENTS FOR INSTRUMENTS USED TO ASSESS THE VALIDITY OF THE FUTURE ORIENTATIONS QUESTIONNAIRE

	SAMPLE (N)	Scale Mean & Std. Dev.	Possible Scale Range	Cronbach alpha
Rotter Internal/ External	Psychology Retest (42)	2.920 .385	1 (internal) to 5 (external)	.875
Taylor Manifest Anxiety	Psychology Retest (42)	1.675 .170	1 anxious 2 non-anx	.884
Time Anxiety	Alumni (37)	3.917 .493	1 anxious 6 non-anx	.613
Time Submissiveness	Alumni (37)	2.897 .584	1 submiss. 6 non-"	.334
Time Possessiveness	Alumni (36)	3.449 .629	1 possess. 6 non-"	.382
Time Flexibility	Alumni (40)	2.842 .526	1 flexible 6 non-"	.421
FTPI	Alumni (39)	3.144 .699	1 future 7 non"	.827
Articulation/ Flow of Time	Alumni (39)	3.534 .950	1 high 7 low	.619
Optimistic Mastery	Alumni (39)	2.710 .880	1 high 7 low	.623
Future Structure	Alumni (39)	3.406 .830	1 high 7 low	.634
Time Mindedness	Alumni (39)	3.550 1.40	1 high 7 low	.633
Rejection of Fatalism	Alumni (39)	2.544 .874	1 high 7 low	.318
Planning Intentions	Alumni (37)	1.451 .383	1 high 3 low	.939
Conservatism	Alumni (38)	3.775 .588	1 conserv. 5 liberal	.812

TABLE 12

PEARSON CORRELATIONS, N OF SUBJECTS, AND HYPOTHESIS REFERENCE NUMBERS FOR TESTS OF CONVERGENCE AND DIVERGENCE BETWEEN FUTURE ORIENTATIONS QUESTIONNAIRE SCALES AND OTHER INSTRUMENTS

	Future Orientation	Planfulness	Option Seeking
Rotter Internal/ External	.07 (41) V4:1	.03 (40) V4:1	.20 (41) V4:1
Taylor Manifest Anxiety	.10 (41)	.01 (40)	.12 (41)
Time Anxiety	.04 (37)	-.03 (37)	-.24 (37)
Time Submissiveness	-.28* (40)	.18 (40)	-.05 (40)
Time Possessiveness	.23 (36)	.24 (36)	.29* (36)
Time Flexibility	.51*** (40)	.36* (40)	.32* (40)
FTPI	.28* (39)	.52*** (39)	.51*** (39)
Articulation/ Flow of Time	-.11 (40)	.14 (40)	.28* (40)
Optimistic Mastery	.31* (40) V4:4	.49*** (40) V4:4	.54*** (40) V4:4
Future Structure	.49*** (40) V2:6	.57*** (40) V3:2	.28* (40)
Time Mindedness	-.02 (40)	.32* (40)	.17 (40)
Rejection of Fatalism	.02 (39)	.27* (39)	.45** (39)
Planning Intentions	.45** (37) V4:6	.61*** (37) V1:2	.22 (37) V4:6
Conservatism	-.29 (38)	-.20 (38)	-.44** (38)

* $p < .05$ ** $p < .01$ *** $p < .002$

Cell contents: Pearson Correlation (N of Subjects) Hypothesis Number

TABLE 12 (continued)

	Internal/ Societal		Internal/ Personal		Others Control	
Rotter Internal/ External	.30*	(40) V2:1	.36**	(42) V2:1	-	V2:1
Taylor Manifest Anxiety	.16	(40)	.03	(42)	-	
Time Anxiety	-.31*	(37)	-.25	(37)	-.22	(37)
Time Submissiveness	-.02	(40)	-.23	(43)	-.31*	(40)
Time Possessiveness	-.01	(36)	.06	(36)	-.10	(36)
Time Flexibility	.13	(40)	.21	(40)	.03	(40)
FTPI	.19	(39)	.44**	(39)	.13	(39)
Articulation/ Flow of Time	.19	(40)	.34*	(40)	.17	(40)
Optimistic Mastery	.23	(40)	.44**	(40) V2:5	.12	(40)
Future Structure	-.04	(40)	.31*	(40)	.06	(40)
Time Mindedness	.35*	(40)	.04	(40)	.07	(40)
Rejection of Fatalism	.16	(39)	.28*	(39)	.10	(39)
Planning Intentions	.40**	(37)	-.19	(37) V4:7	.11	(37)
Conservatism	-.26	(38)	-.38**	(38)	-.25	(38)

* $p < .05$ ** $p < .01$ *** $p < .002$

TABLE 12 (continued)

	Luck	Fate	Random	Acceptance
Rotter Internal/ External	.48***(41) V2:2	.38** (41) V2:2	.54***(39) V2:2	.36** (41) V2:2
Taylor Manifest Anxiety	.29* (41)	.38** (41)	.30* (39)	.28* (41)
Time Anxiety	-.06 (36)	-.48***(37)	-.31* (37)	-.10 (37)
Time Submissiveness	.42** (39)	-.07 (40)	.16 (39)	-.05 (39)
Time Possessiveness	-.13 (35)	.36* (36)	-.06 (35)	.21 (35)
Time Flexibility	.10 (39)	-.25 (40)	.32* (39)	-.17 (39)
FTPI	.31* (38)	.04 (39)	.62***(38)	.24 (38)
Articulation/ Flow of Time	.29* (39)	.11 (40)	.35* (39)	-.01 (39)
Optimistic Mastery	.17 (39)	-.14 (40)	.46** (39)	.08 (39)
Future Structure	.37** (39)	.02 (40)	.65***(39) V3:2	.46** (39)
Time Mindedness	.32* (39)	.01 (40)	.41** (39)	.09 (39)
Rejection of Fatalism	.06 (38) V3:3	.06 (39) V1:1	.30* (38) V3:3	-.05 (38)
Planning Intentions	.36* (36)	.01 (37)	.47***(36)	.53***(36)
Conservatism	-.32* (37)	-.57***(38)	-.26 (37)	-.57***(37)

* $p < .05$ ** $p < .01$ *** $p < .002$

TABLE 12 (continued)

	Concern	Future Anxiety
Rotter Internal/ External	-.35* (41) V4:3	-.51***(41) V4:2
Taylor Manifest Anxiety	-.45** (41) V4:3	-.58***(41) V2:3
Time Anxiety	.04 (37)	.43** (36) V2:4
Time Submissiveness	-.10 (40)	.03 (39)
Time Possessiveness	.15 (36)	.23 (35)
Time Flexibility	.22 (40)	.00 (39)
FTPI	-.27* (39)	-.59***(38)
Articulation/ Flow of Time	-.18 (40)	-.54***(39) V3:1
Optimistic Mastery	-.28* (40)	-.61***(39) V4:5
Future Structure	-.19 (40)	-.24 (39) V3:2
Time Mindedness	.02 (40)	-.27 (39)
Rejection of Fatalism	-.21 (39)	-.51***(38) V3:3
Planning · Intentions	.49***(37)	.20 (36)
Conservatism	-.20 (38)	.05 (37)

* $p < .05$ ** $p < .01$ *** $p < .002$

incorporated into the single IE score, the relationship is one of trait similarity rather than trait identity; the hypotheses are therefore of type V2, as defined above.

Hypothesis V2:1--Rotter's I/E scale will correlate moderately with Internal Control of Societal Future Events, Internal Control of Personal Future Events, and Powerful Others Control Future Events.

Hypothesis V2:2--Rotter's I/E scale will correlate moderately with Luck, Fate, Random and Acceptance.

On theoretical grounds, weak relationships are expected with the other FOQ scales. Anticipation of the future in the form of Future Orientation, Planfulness, and/or Option-Seeking Behavior would have more utility to individuals who have an expectation of internal control of events. Similarly, Concern and Anxiety regarding the future would be more appropriate to someone who saw no opportunities to respond to, or shape, situations (external control); thus a correlation between high anxiety and external control is expected (a negative correlation). These expectations can be summarized as follows:

Hypothesis V4:1--Rotter's I/E scale will correlate moderately with Future Orientation, Planfulness, and Option Seeking Behavior.

Hypothesis V4:2-- Rotter's I/E scale will show a moderate negative correlation with Concern and Future Anxiety.

The modified Rotter instrument was included in the packet administered to the Psychology Retest sample, after the Future Orientations Questionnaire. This instrument as modified, appears in Appendix B.

The mean and standard deviation for the Rotter instrument are shown in the first row of Table 11. Also, as noted in that table, an acceptable alpha coefficient of .875 was obtained.

Correlations between the Rotter scale and the 12 FOQ scales are presented in the first row of Table 12. Hypothesis V2:1 was supported by significant correlations with the Internal/Societal and Internal/Personal scales. The portion of the hypothesis regarding the Others Control scale was not tested. Hypothesis V2:2 was supported by significant correlations with Luck, Fate, Random, and Acceptance. Hypothesis V4:1 was not supported; the relationships between the Rotter scale and Future Orientation, Planfulness, and Option-Seeking Behavior, which had been expected to be of moderate strength, were not significant. Hypothesis V4:2 was supported by significant negative correlations with Concern and Future Anxiety.

Manifest Anxiety Scale. The Taylor Manifest Anxiety Scale (1953) was selected to demonstrate convergent validity with Future Anxiety and Concern. The scale contains 50 statements to be rated true or false. Items were selected from the Minnesota Multiphasic Personality Inventory (MMPI) and identified by a panel of clinical psychologists as being indicative of trait anxiety. One's score on the instrument consists of the number of items rated in the anxious directions.

The relationship between the Taylor scale and the two FOQ scales in question is one of trait similarity. Future Anxiety is not identical with Manifest Anxiety in that the former deals only with future tense items, and does not focus on manifest (behavioral) indicators of

anxiety. The relation between Manifest Anxiety and Concern is somewhat more remote, and is a theoretical relationship predicated on the relationship between Future Anxiety and Concern (Table 10).

There is no trait or theoretical basis on which to postulate a relationship between Manifest Anxiety and the other 10 FOQ scales; they are therefore presumed to diverge. The hypothesized relationships are summarized here:

> Hypothesis V2:3--Taylor's Manifest Anxiety Scale will demonstrate a moderately high negative correlation with Future Anxiety (trait similarity). The correlation will be negative because anxiety is scored low on the FOQ scale and high on the Taylor instrument.
>
> Hypothesis V4:3--Taylor's Manifest Anxiety Scale will demonstrate a moderate negative correlation with the Concern scale of the FOQ.
>
> Hypothesis V6:1--Taylor's Manifest Anxiety Scale will demonstrate a low and insignificant correlation with all other FOQ scales.

The Taylor instrument was included as the last instrument in the Psychology Retest packet. It was completed after the FOQ and the Rotter control scale. An acceptable Cronbach alpha (.884) was obtained; see Table 11.

The expected relationships with Future Anxiety and Concern, stated in Hypotheses V2:3 and V4:3, were supported. The expectation of insignificant relationships with all other FOQ scales was contradicted by significant correlations with the entire "Avoidance" group (Luck, Fate, Random, and Acceptance). This finding is not surprising in light

of the correlations between these four FOQ scales and the FOQ Future Anxiety scale (see Table 10).

Time Attitude Scales. The Calabresi-Cohen Time Attitude Scales (1968; scale name suggested by Vella, 1978) were selected to provide additional convergent validation of the Future Anxiety scale. This instrument was discussed in Chapter II. The original instrument consisted of 46 statements to be rated on a six-point Likert (agree-disagree) scale. The original version is no longer available (Calabresi, 1981) but the 39 items which load most strongly on the four factor scales were listed in the original article. From these it was possible to reconstruct an instrument by using the 39 items in rotated sequence.

The Calabresi-Cohen Time Anxiety scale bears a closer relationship to Future Anxiety than does the Taylor scale, since it deals exclusively with anxiety relation to time. On the other hand, it does not limit itself to future time, as the FOQ scale does. The following hypothesis was developed:

> Hypothesis V2:4--The Calabresi-Cohen Time Anxiety scale will demonstrate a moderately high correlation with the FOQ Future Anxiety scale.

On the basis of the relationship between Future Anxiety and Concern, another hypothesis of convergence was formulated:

> Hypothesis V4:3--The Calabresi-Cohen Time Anxiety scale will demonstrate a moderate correlation with the FOQ Concern scale.

The Calabresi-Cohen scales do not suggest any other convergent relationships based either on trait similarity or theoretical relationships. Thus:

> Hypothesis V6:2--The Calabresi-Cohen Time Attitude scales will demonstrate a low (insignificant) correlation with all other FOQ scales other than Future Anxiety.

The Calabresi-Cohen instrument as reconstructed was presented to Alumni Conference subjects as the last of five instruments in the battery (Appendix A). Cronbach alpha coefficients for the four Time Attitude Scales ranged from .61 for Time Anxiety down to .33 for Time Submissiveness (see Table 11). Each was considerably lower than the corresponding alpha coefficient reported by Calabresi and Cohen (1968, pp. 435-436), which were in the range of .47 to .79. These weak alpha's indicate caution in the interpretation of findings.

Hypothesis V2:4 was supported by a significant correlation between Time Anxiety and the FOQ Future Anxiety scale. Hypothesis V4:3 was not supported.

Unanticipated significant relationships (contrary to Hypothesis V6:2) were found between Time Anxiety and the FOQ Fate, Random, and Internal/Societal scales. These were two of the FOQ scales which also correlated significantly with the Taylor Manifest Anxiety Scale, and the same explanation is plausible: Fate and Random are correlated significantly with Future Anxiety (see Table 10). However, this line of reasonaing would suggest that Luck, which also correlated significantly

with Future Anxiety, should correlate significantly with Time Anxiety; it did not.

No clear explanation is immediately available for the correlation between Time Anxiety and Internal/Societal. The fact that many of the Time Anxiety items refer to the past rather than the present or future may be relevant in some way. For example, Calabresi-Cohen item 26 (a Time Anxiety item) reads, "When I am by myself, my thoughts often drift back to the past."

Time Submissiveness showed an unanticipated significant negative correlation with Future Orientation. This finding is plausible when one considers that most of the Time Submissiveness items involve submission to present time. For example, Calabresi-Cohen item 2 reads, "I like to have a definite schedule and stick to it." Number 12, also a Time Submissiveness item, reads, "I would be lost without a watch." It may be that the future-oriented individual is somewhat of a dreamer, someone who is reluctant to submit to the demands of the immediate moment. It should be noted also that the alpha coefficient of Time Submissiveness was low (.334).

The correlation of Time Possessiveness with Option-Seeking Behavior can again be understood as a matter of domain overlap. Item 35 is "I wish I would live long enough to see what the world will be like 100 years from now." There may also be a more theoretical relationship between Time Possessiveness and the "Anticipation" scales: a sense of clinging to the present moment which seems typical of most of the Time

Possessiveness items (number 15: "It bothers me to think how fast time goes.") may be antithetical to thought about the future.

The relationship between Time Submissiveness and Others Control shows a logical consistency. For example, item 2, "I like to have a definite schedule and stick to it," although it refers to submission to an abstracted "schedule," may be consistent with submission to or acquiescence in the control or influence of powerful others.

Unanticipated significant relationships between Time Flexibility and the "Anticipation" group (Future Orientation, Planfulness, and Option Seeking) are understandable in terms of domain overlap. For example, Calabresi-Cohen item 8 (a time flexibility item), reads "It is fun to plan for the future, even though the plans may not work out." The relationship between Time Flexibility and Random is interpretable in terms of domain overlap between the unpredictable/unknowable aspect of the Random variable and such items as Calabresi-Cohen number 3 ("There are days that go so fast it's hard to figure out where all the time went.") and number 28 ("When I am on vacation I like the luxury of forgetting about time.")

Future Time Perspective Inventory. Heimberg's (1963) Future Time Perspective Inventory (FTPI) was selected as a basis for testing a variety of convergence hypotheses. The instrument, discussed in Chapter II, produces an overall score and sub-scores on five scales originally identifed through a factor analysis with quartimax rotation. The version of the Heimberg instrument used is that provided by Vella (1978, pp. 356-358). Vella's version includes revised wordings of six items

(4, 8, 10, 12, 20, and 22) which reverse the direction of the original items (Heimberg, 1963, pp. 27-28), apparently to provide a better balance between future and non-future wordings. Three additional modifications were made: items 7 and 24, which had referred to the army and school in Heimberg's and Vella's version, were adapted for use by a general adult sample; also, the sex bias of item 1 was corrected.

Heimberg's scale concepts are post facto labels for the factor scales and are not defined other than by listing the component scales. With this fact as a precaution, a hypothesis of trait identity was postulated for one of the scales:

Hypothesis V1:1--Heimberg's Rejection of Fatalism scale will correlate strongly with the FOQ Fate scale (trait identity).

Two hypotheses were formulated on the basis of trait similarity, based on this author's interpretation of the operationally defined Heimberg traits:

Hypothesis V2:5--Heimberg's Optimistic Mastery scale will correlate moderately with the FOQ Internal/Personal scale.

Hypothesis V2:6--Heimberg's Future Structure scale will correlate moderately with the FOQ Future Orientation scale.

A number of additional relationships were suggested by domain overlap between Heimberg scales and FOQ scales.

Hypothesis V3:1--Heimberg's Articulation with the Flow of Time scale will correlate moderately with Future Anxiety.

Hypothesis V3:2--Heimberg's Future Structure scale will correlate moderately with Planfulness, Random, and Future Anxiety.

Hypothesis V3:3--Heimberg's Rejection of Fatalism scale will correlate moderately with Luck, Random, and Future Anxiety.

A number of additional hypotheses are based on theoretical arguments. A sense of optimistic mastery of the future should make it more useful (and also more pleasant) for one to think about the future (Future Orientation). Based on the relation which has been demonstrated between Future Orientation and the other two "Anticipation" scales, Planfulness and Option Seeking, a relationship with these is also expected.

Hypothesis V4:4--Optimistic Mastery scale will correlate moderately with Future Orientation, Planfulness, and Option Seeking.

On the grounds that Optimistic Mastery is logically inconsistent with anxiety about the future, the following was proposed.

Hypothesis V4:5--Optimistic Mastery will correlate moderately (and negatively) with Future Anxiety.

No attempt was made to formulate hypotheses involving the Time Mindedness scale or the overall Future Time Perspective Inventory score. There was no a priori basis to expect convergence with the other pairings of Future Time Perspective Inventory scales and the 12 FOQ scales. Thus:

Hypothesis V6:3--a low and insignificant correlation is expected for the other 34 pairings of FTPI and FOQ scales.

The Heimberg instrument was included in the battery presented to Alumni Conference subjects (Appendix A). It was the third instrument in the battery. Cronbach alpha coefficients were in the low .60s (see

Table 11) except for the overall score (.827) and the two-item Rejection of Fatalism scale (.318).

Hypothesis V3:1, which linked Articulation with the Flow of Time and Future Anxiety, was supported by a significant correlation. Articulation with the Flow of Time also correlated significantly with Internal/Personal, which may be a matter of domain overlap. There are no Articulation items worded in the positive direction; the typical (negative) wordings seem to convey a sense of one's personal life being out of control. For example, Heimberg item 13 reads, "Sometimes I feel that everything is moving on ahead and leaving me behind." Number 4 reads, "I find it hard to get things done without a deadline." It may be that Articulation with the Flow of Time would have been better labeled in terms of an experience of, or preference for, external control of one's personal life.

The hypothesized relationships involving Optimistic Mastery (V4:4 and V4:5) were all supported. The unanticipated relationship betwen Optimistic Mastery and Concern is plausible in light of the relationship between Future Anxiety and Concern.

Hypothesized relationships involving Future Structure (V2:6 and V3:2) were supported, with the exception of the expected correlation with Future Anxiety, which did not attain significance. Domain overlap was the basis for expecting a moderate correlation; however, the Future Structure item closest to Future Anxiety, number 5 ("My future seems dark to me.") is only one of eight items on this scale, and loaded only

.36 on the Future Structure factor (Heimberg, 1962, p. 28). A less-than-significant correlation is therefore not problematical.

The correlation between Future Structure and Option Seeking is plausible considering the strength of the correlations between Future Structure and the other two "Anticipation" scales and the strength of the correlations among the Anticipation scales.

The relationship between Future Structure and Internal/Personal is plausible in terms of the correlation of Future Structure with Future Orientation and Planfulness, and the correlation between those two FOQ scales and Internal/Personal.

No hypotheses were formulated regarding Time Mindedness. Significant correlations were observed between this scale and the FOQ Planfulness, Internal/Societal, Luck, and Random scales. The relationship between Time Mindedness and Planfulness, may be largely a matter of domain overlap: Heimberg item 8, "I generally act on the spur of the moment," is an opposite of Planfulness.

The hypothesis of trait identity between Rejection of Fatalism and the FOQ Fate scale (V1:1) was not supported. Unlike the FOQ Fate items, the Heimberg Rejection of Fatalism items do not mention fate or destiny. One from Heimberg's preliminary version which did ("I feel there is a kind of fate or destiny in my life.") loaded only .32 on that factor scale. It appears that the Heimberg scale is mislabeled, in relation to the terminology proposed in this study. The correlation of Rejection of Fatalism with Planfulness and Option Seeking can be understood as a probable case of domain overlap; Heimberg item 11 reads, "Sometimes I feel

there is nothing new to look forward to in the future." This item is a clear opposite item for Option Seeking Behavior. Heimberg's item 22, "I often find myself looking for ways to kill time," reflects a sense of purposelessness which is essentially opposite to Planfulness.

The relationship between Rejection of Fatalism and Internal/Personal appears to be a case of domain overlap. Heimberg item 11 reads, "Sometimes I feel there is nothing new to look foward to in the future." This item has nothing to do with fate as defined in the present study, but does convey a sense of abdication of personal responsibility for events or outcomes in one's life.

The significant correlation with the FOQ Random scale is interpretable as a matter of domain overlap. Heimberg item 12, "The future seems very clear and certain to me," is compatible with the definition of the Random/Unpredictable/Unknowable variable.

Planning Intentions. The Clifton Planning Intentions scale (1972) is part of a five-scale Time Perspective Questionnaire. Scales assessing Nostalgia, Happiness, and Optimism precede it in the original; a scale measuring Planning Behaviors follows it. The Planning Intentions scale consists of 40 statements with a three point (agree, disagree, cannot decide) scale.

The Clifton scale was included to provide a convergence test for the Planfulness scale. On theoretical grounds, it was expected to be related to the associated "Anticipation" concepts of Future Orientation and Option Seeking. Also, it was anticipated that a sense of Internal

Control of Personal Future Events would be a logical prerequisite for planning intentions. The following hypotheses resulted:

Hypothesis V1:2--Clifton's Planning Intentions scale will correlate strongly with Planfulness.

Hypothesis V4:6--Clifton's Planning Intentions scale will correlate moderately with Future Orientation and Option-Seeking Behavior.

Hypothesis V4:7--Clifton's Planning Intentions scale will correlate moderately with Internal Control of Personal Future Events.

Hypothesis V6:4--Clifton's Planning Intentions scale will demonstrate low and insignificant correlations with the other eight FOQ scales.

The Clifton scale was the fourth of five instruments administered to the Alumni Conference sample. It is presented in Appendix A. A high Cronbach alpha (.939) was obtained.

The hypothesis of trait similarity between Planning Intentions and the FOQ Planfulness scale (V1:2) was supported. A significant correlation with Future Orientation was also observed, as expected (Hypothesis V4:6). However, the expected convergences with Option Seeking (V4:6) and Internal/Personal (V4:7) were not supported. No interpretation is suggested for these relationships, or for the unexpected significant correlation with Internal/Society.

The significant correlations between Planning Intentions and three of the "Avoidance" scales were not anticipated. There is, however, a

similar pattern of correlations between Planfulness and these same three scales. Furthermore, some of the reverse-worded Planning Intentions items reflect domain overlap with Acceptance. For example, item 29 is, "It is best to live just for today."

Planning Intentions has domain overlap with Concern, which suggests an explanation of their strong but unanticipated intercorrelation. For example, Planning Intentions item 40 reads, "you get more adventure out of living if you just take each day is it comes."

Conservatism Scale. The McClosky Conservatism scale (1958; Robinson et al., 1968, p. 96) was selected to provide a test of a possible rival hypothesis, namely, that future activism and its component variables can be largely subsumed under a conservatism-liberalism dimension. The instrument was selected in part because of its brevity: it consists of 9 statements with a disagree-agree scale.

The following hypothesis of divergence was proposed:

Hypothesis V5:1--Conservatism as measured by the McClosky scale will demonstrate a low and insignificant correlation with all FOQ scales.

The McClosky scale was administered to the Alumni Conference sample as the second in the battery of five instruments. The rating scale used was the same as that for the FOQ. It was numbered consecutively with the FOQ items and was not distinguished from them (Appendix A). An acceptable Cronbach alpha coefficient (.812) was obtained.

Hypothesis V5:1 was not supported. Except for a weak relationship with Future Anxiety (r=.05), all correlations were higher than .20 in

the negative direction (i.e., conservatism corresponds with the non-Future Active direction of the FOQ variables). The relationships with five FOQ variables attained significance: Option Seeking, Internal/Personal, Luck, Fate, and Acceptance. Despite the hypothesized divergence, these relationships are not surprising. They suggest that more conservative people are less interested than others in exploring options, have less confidence about their ability to influence outcomes in their personal lives, are more prone to attribute events to luck, chance, fate, or destiny, and are more prone to accept what comes. These attributes are consistent with the concept of conservatism; they suggest that the hypothesis of divergence was ill-founded and, therefore, that future activism is not independent of the liberalism-conservatism dimension.

Review of intertest findings. Overall, the intertest approach to validation produced results which support the proposed interpretations of the 12 Future Orientations Questionnaire scales. The vast majority of hypotheses of convergence were supported. Convergence was anticipated for 33 of the 168 correlation matrix cells (Table 12); significant correlations ($p<.05$) were obtained for 24 of these 33 relationships (72.7%) (see Table 13).

Divergence was expected for the 12 cells involving FOQ scales and the McClosky Conservatism scale; significant correlations were nonetheless obtained for five (41.7%) of these relationships. Divergence was also anticipated for 99 cells for which there was no particular basis to expect convergence; significant correlations were obtained for 34

TABLE 13

SUMMARY OF SIGNIFICANCE OF HYPOTHESIZED RELATIONSHIPS BETWEEN FOQ SCALES AND COMPARISON INSTRUMENTS

Number of Pairs (Column Percent)	Hypothesized Convergent	Hypothesized Divergent		Not Hypothesized (FTPI & Time-Mindedness)
		Conservatism	Other	
Significant ($p<.05$)	24 (72.7%)	5 (41.7%)	34 (34.4%)	12 (50.0%)
Not Significant	8 (24.3%)	7 (58.3%)	64 (64.6%)	12 (50.0%)
Not Tested	1 (3.0%)	-	1 (1.0%)	-
Total	33	12	99	24

(34.4%) of these relationships. Unanticipated significant correlations were, with rare exceptions, easily interpretable in terms of domain overlap, logical connections, or consistencies in broader patterns of correlations. In some cases, the findings suggested refinements in the interpretations of scales of the comparison instruments. The hypothesis of divergence between Conservatism (as measured by the McClosky instrument) and all FOQ scales was rejected; it is apparent that the concept of Future Activism is not independent from Conservatism.

Criterion-Related Methods. Two specific hypotheses were formulated with respect to behavioral criteria and membership in "known groups." The first pertains to political involvement behavior as measured by a

16-item inventory developed by this author. This political involvement inventory was included at the end of the Future Orientations Questionnaire (Version III) which was presented to the main Psychology sample. It is included here as Appendix B.

The use of this scale could be considered an intertest method, but it is reported here, as a criterion-related method, because of its strict behavioral basis. No prior validity data are available; this it has in common with several published scales of political involvement (see, for examples, Robinson et al., 1968) which are also supported on the basis of face validity. A revision of the instrument on the basis of the initial (Psychology) data was intended, but was deemed not worthwhile on the basis of the initial findings.

The following hypothesis was formulated:

Validity Hypothesis V7:1--Political Involvement will correlate positively with all aspects of Future Activism (i.e., all 12 FOQ scales), and especially with Internal Control of Societal Future Events.

The rationale for this hypothesis is that political involvement is, almost inevitably, behavior intended to influence or shape events in the future. It is therefore a possible criterion behavior for Future Activism.

The second criterion-related hypothesis ostensibly involved two so-called known groups: people who attended a conference on the future of education (the Futures Conference sample from the "Unlearning the

Twentieth Century" conference at the University of Massachusetts, November, 1980) and people who attended a conference of alumni of the School of Education of the University of Massachusetts, which did not deal directly with the future as a theme. Attendance at the Futures Conference may be considered a behavioral indicator of interest in the future; as such, it is a possible criterion behavior for future activism. The Alumni Conference sample was utilized in part because of its potential comparability with the Futures Conference sample in other respects than the behaviorally demonstrated interest in the future.

The following hypothesis was formulated:

Validity Hypothesis V7:2:--Persons demonstrating interest in the future by attending a conference on the subject will demonstrate significantly more future active scores on all scales of the Future Orientations Questionnaire than people attending a conference which does not have a future-oriented theme.

Results of Criterion-Related Methods. The Political Involvement Inventory used to test Hypothesis V7:1 demonstrated the following properties: coefficient alpha of .669; mean number of activities which the 232 Psychology sample respondents indicated having participated in: 4.78; insignificant Pearson correlations with sex, age, and family income (-.02, -.08, and -.02, respectively)(N=232). The correlations with FOQ scales obtained from the Psychology sample are presented in Table 14. The hypothesis was not, in general, supported; however, the

TABLE 14

PEARSON CORRELATIONS BETWEEN THE POLITICAL INVOLVEMENT INVENTORY AND SCALES OF THE FUTURE ORIENTATIONS QUESTIONNAIRE OBTAINED WITH THE PSYCHOLOGY SAMPLE

FOQ Scale	Pearson r	N
Future Orientation	.09	225
Planfulness	.09	224
Option-Seeking	.00	227
Internal/Societal	.21***	228
Internal/Personal	.02	230
Others Control	no data	
Luck	.06	227
Fate	.01	226
Random	.19**	226
Acceptance	.06	224
Concern	.01	227
Future Anxiety	.06	228

**$p < .01$
***$p < .002$

strongest relationship, as expected, was between Internal/Societal and Political Involvement. Only the correlations with Internal/Societal and Random were significant. Future Activism as measured by the FOQ does not, with the exception of those two scales, correspond to Political Involvement as measured by the Political Involvement Inventory.

Hypothesis V7:2, regarding the comparison of Futures Conference and Alumni conference groups, was examined using Student's t statistic to evaluate the significance of differences between group means on the 12 FOQ scales. Table 15 presents the results of these tests. Futures conference participants' means were in the expected direction (more future active) compared to Alumni conference means for all scales

TABLE 15

MEAN FOQ SCALE SCORES FOR FUTURES CONFERENCE AND ALUMNI CONFERENCE SAMPLES

FOQ Scale	Futures Conference Mean	(N)	Alumni Conference Mean	(N)	Significance	T-Value	D.F.
Future Orientation	2.159	62	2.479	40	*	-2.29	100
Planfulness	2.1587	63	2.281	40		- .92	101
Option-Seeking	1.861	63	2.019	40		-1.40	101
Internal/ Societal	2.069	63	2.517	40	***	-3.23	101
Internal/ Personal	1.956	63	1.950	40		.06	101
Others Control	2.533	61	3.029	40	***	-3.38	99
Luck	2.670	63	2.733	39		-.38	100
Fate	2.368	63	2.545	40		-1.18	101
Random	2.263	62	2.297	39		- .28	99
Acceptance	2.500	61	2.654	39		-1.08	98
Concern	2.512	63	2.719	40		-1.43	101
Future Anxiety	3.718	63	3.545	39		1.07	100

* $p < .05$ *** $p < .002$

except Internal/Personal; Future Conference participants were slightly less anxious about the future than Alumni Conference participants. However, the differences were significant ($p<.05$) for only three scales (using a pooled variance estimate): Future Orientation, Internal/Societal, and Others Control.

In order to investigate possible "contamination" of the Alumni sample by individuals who had on another occasion attended a future-oriented conference, workshop, or course, a question to that effect was included among the Alumni Conference demographic questions. Eighteen of forty had done so. These 18 were combined with the Futures Conference sample to form a "Futures" sample of 80, leaving an Alumni Non-Futures group of 22. T-tests were again performed for the 12 FOQ scales. A similar pattern of mean differences and significance emerged; Concern as well as the three scales mentioned above achieved significant differences in means ($p<.05$).

These findings must be interpreted in light of the fact that both the Futures Conference and the Alumni Conference samples are atypical with respect to the overall adult population in several respects. They are well educated (the majority in each sample having completed at least a Master's degree), financially advantaged (median income, $20,000 to $25,000 category), and predominantly teachers or educational adminstrators (see Appendix E). In light of these common features of the two samples, a finding of FOQ scale differences in the expected direction suggests that the FOQ is potentially a sensitive indicator. Future efforts to establish the criterion-related validity of the instrument

should utilize samples which are more diverse with respect to demographic variables and/or more different in their expected FOQ scores.

Population Generalizability

Assessment of possible relationships between a new instrument and key demographic variables is an essential aspect of instrument development (APA et al., 1974, p. 783). As a means of investigating the generalizability of assertions about the meaning of instrument scales, the study of relationships with demographic variables may be considered an aspect of construct validation (Messick, 1980, p. 1018). To the extent that hypotheses about these relationships can be formulated on the basis of theory or past research, such studies become part of a nomological approach to validation.

In the present case, relationships between FOQ scales and sex, race, age, and income were investigated. Past research suggested that one or more of these variables may be related significantly to future orientation (Vella, 1978), planning intentions (Clifton, 1971, p. 226), and internal/external control (Plante, 1977, pp. 20-34; Strickland and Haley, n.d.). However, because few of the FOQ scales are identical to pre-existing scales, the relevance of past research is limited. Therefore, no formal hypotheses about demographic relationships were formulated. Instead, for each of the four demographic variables, a null hypothesis of no significant relationship was tested against a non-directional alternative hypothesis. For sex and race, Student's t

was used to assess the significance of differences in group means (male/female and white/non-white). For age (in years) and income (in an eight-category coding; see note to Table 19), Pearson correlations with each FOQ scale were computed and their significance assessed using a *t*-test.

Results are shown in Tables 16 to 19. For the most part, the correlations and differences in means are small and do not attain even the .05 significance level. There are some notable exceptions.

Means and *t*-test results for sex are shown in Table 16. Only two scales, *Luck* and *Random*, showed significantly different means for men than women, and those only for the Alumni sample. In general, sex is not an influential variable with respect to FOQ scores for the samples in question.

Means and *t*-test results by race are shown in Table 17. Non-whites were significantly different from whites on the *Future Orientation* scale in the Alumni Conference sample. No other significant results were obtained; the number of non-whites was too low to provide a full test of race as a possibly influential variable. Also, the occurrence of one significant correlation among 24 is not surprising statistically.

Correlations with age are shown in Table 18. They are insignificant for the most part; no single scale shows a significant correlation with age for all three samples.

Correlations with income are shown in Table 19. Again, they are generally insignificant; none is significant for all three samples. The

TABLE 16

MEANS FOR FOQ SCALES BY SEX, FOR FUTURES CONFERENCE AND ALUMNI CONFERENCE SAMPLES

Variable	Futures Conference		Alumni Conference	
	Mean (Males) (N=30)	Mean Female (N=26)	Mean (Males) (N=22)	Mean (Females) (N=16)
Future Orientation	2.113	2.167	2.474	2.393
Planfulness	2.204	2.120	2.116	2.389
Option-Seeking	1.792	1.896	2.125	1.828
Internal/ Societal	2.078	2.042	2.439	2.479
Internal/ Personal	1.925	1.979	1.897	2.063
Others Control	2.350	2.616	3.167	2.906
Luck	2.540	2.792	2.495	2.988 *
Fate	2.413	2.275	2.636	2.475
Random	2.229	2.292	2.104	2.457 *
Acceptance	2.438	2.656	2.705	2.517
Concern	2.417	2.420	2.534	2.859
Future Anxiety	3.733	3.625	3.534	3.400

* $p < .05$ (2-tailed test)

TABLE 17

MEANS FOR FOQ SCALES BY RACE, FOR FUTURES CONFERENCE AND ALUMNI CONFERENCE SAMPLES

Variable	Futures Conference Means		Alumni Conference Means	
	White (N=51)	Non-White (N=5)	White (N=32)	Non-White (N=8)
Future Orientation	2.102	2.571	2.589	2.036 *
Planfulness	2.152	2.311	2.365	1.955
Option-Seeking	1.847	1.750	2.031	1.969
Internal/ Societal	2.075	1.933	2.521	2.500
Internal/ Personal	1.944	2.000	1.922	2.063
Others Control	2.424	2.867	3.000	3.146
Luck	2.696	2.240	2.781	2.550 *
Fate	2.331	2.560	2.481	2.800
Random	2.245	2.371	2.318	2.214 *
Acceptance	2.559	2.350	2.742	2.313
Concern	2.415	2.450	2.703	2.781
Future Anxiety	3.745	3.100	3.452	3.906

* $p < .05$

TABLE 18

PEARSON CORRELATIONS BETWEEN AGE AND FOQ SCALES FOR PSYCHOLOGY, FUTURES CONFERENCE, AND ALUMNI CONFERENCE SAMPLES

Variable	Psychology r	(N)	Futures Conf. r	(N)	Alumni Conf. r	(N)
Future Orientation	.07	(238)	-.08	(39)	.22	(34)
Planfulness	.07	(145)	.01	(39)	-.06	(34)
Option-Seeking	-.01	(239)	.06	(39)	-.02	(34)
Internal/ Societal	-.04	(241)	-.25	(39)	-.26	(34)
Internal/ Personal	-.14*	(243)	.06	(39)	.37*	(34)
Others Control	-		.08	(40)	.11	(34)
Luck	-.03	(240)	-.06	(40)	-.07	(33)
Fate	-.14	(243)	-.04	(39)	.11	(34)
Random	.02	(238)	-.07	(39)	-.02	(34)
Acceptance	.13*	(235)	-.26	(37)	.04	(34)
Concern	.21***	(239)	-.01	(40)	.00	(34)
Future Anxiety	.16**	(241)	.27*	(39)	.13	(33)

* $p < .05$ ** $p < .01$ *** $p < .002$

TABLE 19

PEARSON CORRELATIONS BETWEEN INCOME LEVEL AND FOQ SCALES FOR PSYCHOLOGY, FUTURES CONFERENCE, AND ALUMNI CONFERENCE SAMPLES

Variable \ Sample:	Psychology r	Psychology (N)	Futures Conf. r	Futures Conf. (N)	Alumni Conf. r	Alumni Conf. (N)
Future Orientation	-.07	(233)	-.14	(53)	.05	(37)
Planfulness	-.12*	(231)	-.07	(54)	.12	(37)
Option-Seeking	.03	(234)	.05	(54)	-.27	(37)
Internal/ Societal	-.03	(236)	-.06	(54)	-.04	(37)
Internal/ Personal	.06	(238)	.01	(54)	-.15	(37)
Others Control	-		-.05	(53)	.03	(37)
Luck	.00	(235)	-.08	(55)	-.03	(36)
Fate	-.01	(233)	-.04	(54)	-.40**	(37)
Random	-.01	(233)	-.15	(54)	-.12	(36)
Acceptance	.00	(230)	-.14	(52)	.00	(36)
Concern	-.13*	(234)	.26*	(55)	.16	(37)
Future Anxiety	-.03	(236)	.34**	(54)	.12	(36)

* $p < .05$ ** $p < .01$

Note: Respondents indicated family income according to the following category scheme: under $5,000; $5,000 to $9,999; $10,000 to $14,999; $15,000 to $19,999; $20,000 to $24,999; $25,000 to $29,999; $30,000 to $50,000; over $50,000.

strongest correlations are between income and Future Anxiety for the psychology sample (low anxiety with higher income) and between Fate/Destiny and income for the Alumni Conference sample (low fatalism with higher income).

In general, the relationship betwen FOQ scales and sex, age, income, and race is weak. This finding should be interpreted cautiously because of certain atypical aspects of the sample (high median income and high educational level; see Appendix D), and because of small samples in certain demographic categories (especially non-white and the extremes of the age spectrum).

C H A P T E R V

SUMMARY AND CONCLUSIONS

Review of Findings

An instrument, the Future Orientations Questionnaire, was constructed to assess individual and group differences as well as changes over time with respect to a construct labeled future activism. This construct was defined as an individual's propensity to think and act in anticipation of and with the intention of influencing future events.

The instrument development strategy involved identification of potential component variables of future activism which provided a focus for the generation of items. These items were tested in several preliminary versions of the instrument. Empirical findings led to revision or deletion of items and revision, subdivision, or deletion of variables. Item variance, item and scale test-retest reliability, scale internal consistency, and factor analysis were the primary statistical tools used in instrument development. The final version of the instrument (Version V) was designed to provide optimal internal consistency and stability over time for each scale with a minimal number of items.

The final version of the Future Orientations Questionnaire (Appendix A) consists of 68 items distributed among 12 scales (Table 6). Although these are not factor scales *per se*, a principle components factor analysis of items with oblique rotation is

generally consistent with this interpretation of the internal structure of the instrument; minor variations were found in the factor analysis results for different samples.

Factor analysis of the 12 scale scores suggested a highly interpretable grouping of the scales in four clusters. However, on the basis of the factor analysis of items as well as distinctiveness of the 12 scales in terms of their intercorrelations and their correlations with previously published instruments, it was decided that the Future Orientations Questionnaire should be scored in terms of the 12 scales, rather than the four clusters.

The concept definitions for the 12 scales are presented here. For ease of comprehension they are grouped according to the four clusters.

Cluster 1: "Anticipation"

Future Orientation--the degree to which the future is a focus of attention for a particular individual.

Planfulness--the degree to which an individual develops plans, intentions, time-tables, and other structured thoughts which serve as guides for actions in the future.

Option-Seeking Behavior--overt or covert behavior which involves the identification and evaluation of options (choices between possible courses of action which will produce different outcomes).

Cluster 2: "Control"

Belief in Internal Control of Societal Future Events--a belief that one can shape or influence outcomes in the future which are of general social significance.

Belief in Internal Control of Personal Future Events--a belief that one can shape or influence outcomes in the future with respect to one's personal life.

Powerful Others Control Future Events--a belief that people in positions of power exert influence which outweighs the possible influence of "ordinary" individuals.

Cluster 3: "Avoidance" (of control)

Luck/Chance--a belief that luck and/or chance play a significant part in the outcome of future events.

Fate/Destiny--a belief that forces of fate and/or destiny exert a significant influence over the outcome of future events.

Random/Unpredictable/Unknowable--a belief that the future is basically unpredictable and/or unknowable, and that random factors play a significant part in the outcome of future events.

Future Acceptance--A belief that a passive response is the most appropriate behavior in many situations.

Cluster 4: "Apprehension"

Concern--a tendency to respond to situations with an unconcerned attitude.

Future Anxiety--anxiety brought about by thought or action directed toward the future.

The 68 items are each uniquely assigned to one of the 12 scales: a scale consists of between three and nine items. In order to compute a scale score, ratings of items not worded in the "future active" direction are reversed (e.g., 2 (agree) becomes 4 (disagree)) and the item scores are averaged. Thus, each scale score may range from 1 to 5, with 1 as the future active extreme. The first five scales as listed above are therefore scored so that a low score is indication of the concept as stated. For the next six scales (beginning with Powerful Others Control...), a high score is indication of the concept as stated. A low score on future anxiety is indication of high future anxiety, even though the relationship of that concept to future activism was not clear. (See Appendix H for scoring procedure.)

The reliability of the scales was assessed by both the test-retest and internal consistency approaches. Test-retest correlations ranged from .72 to .89; Cronbach alpha coefficients of internal consistency ranged from .46 to .85. The weaker scales by these standards are Option-Seeking Behavior, Internal/Societal, Acceptance, and Concern. There is a fair amount of variation from sample to sample in the internal consistency coefficients. In general,

reliabilities are such that scale scores can be used to assess inter-group differences and for certain non-sensitive individual applications (such as the formulation of a tentative educational diagnosis) but not for more sensitive individual applications such as educational or career placement.

Validity was assessed primarily by the intertest method of comparison with known instruments. Hypotheses of convergence and divergence were formulated and tested by examining the magnitude and significance of correlations between FOQ scales and the known instruments. Hypotheses of convergence were, by and large, supported. A substantial number of hypotheses of divergence were not supported, but these cases of unexpected convergence were mostly interpretable as instances of domain overlap, logical connections recognized post facto, or consistencies in broader patterns of correlations. In general, these intertest findings were supportive of the validity of the proposed interpretations of the 12 scales.

Criterion-related validation was attempted through two methods: correlation of FOQ scale scores with an inventory of political involvement behaviors and comparison of scale means between a futures conference sample and an educational alumni conference sample. The Political Involvement Inventory did not correlate significantly with all FOQ scales, as hypothesized, but only with Internal/Societal (a highly interpretable result) and with Random. Other correlations were in the expected direction although several were very nearly neutral. Comparison of Futures Conference and Alumni Conference scores produced

a similar finding. Differences were in the expected direction except for Internal/Personal, but only three scales showed significant differences: Future Orientation, Internal/Societal, and Others Control. Sample sizes, especially for the Alumni sample, were small; there is a need for replication with larger groups.

Possible interrelationship between several demographic variables and FOQ scores were explored. T-tests indicated that, with a few exceptions, sex and race of respondent did not have a significant impact on FOQ scores for the available samples. Correlations of income and age with FOQ scores showed the same result for those demogaphic variables. For the available samples, the instrument appears to be relatively independent of the demographic variables considered.

Because of the number of factorially distinguishable concepts represented by the Future Orientations Questionnaire scales (12), the task of construct validation is a complex one and additional investigation is needed. Specific recommendations are presented later in this chapter.

Conceptual Implications

A multidimensional set of concepts have been identified which are linked logically with the overall construct, future activism. In particular, Planfulness and Option Seeking Behavior emerge as distinct aspects of thought about the future, distinguishable from the more common concept of Future Orientation. A sense of internal control of personal future events is distinguishable empirically from a similar

sense about societal future events. Both appear to be largely distinct from the internal/external control dimension measured by Rotter's instrument, which deals with present time and the present tense. Various aspects of externalized control (Luck, Fate, Random, and Acceptance), although interrelated, are distinguishable from each other. Anxiety about the future, although it is relatively unrelated with other variables represented by FOQ scales, is strongly correlated with several prior measures of future-related variables.

On the basis of the factor analysis confirmation of the item-to-scale assignments and the relatively strong internal consistencies of the scales, the conceptual scheme embodied in the Future Orientations Questionnaire can be recommended as a relatively straightforward and empirically supported framework for further study of future time perspective. It includes concepts which have been studied infrequently in the past (e.g., Planfulness, Option Seeking Behavior) and also clarifies the connection between Time Perspective and Locus of Control.

This empirically grounded conceptual framework should be useful to futurist educators in that it provides a basis for formulating educational objectives, particularly in the affective domain. Further research regarding the behavioral correlates of FOQ scales may serve to substantiate claims made by such educators about the benefits of pursuing specific future-oriented educational objectives.

Recommendations for Further Research

Reliability. Further examination of the instrument's temporal stability and internal consistency would be appropriate. Modifications of a few scales might be justified if consistently mediocre test-retest correlations are found with samples which are more diverse or more representative of the overall population.

Validity. As noted above, the task of validating a 12-scale instrument is a complex one; further validation efforts are appropriate. Intertest comparisons with closely related scales (trait identity or trait similarity) should be undertaken whenever suitable instruments with established reliability and validity become available. However, the primary focus for intertest validation methods will be on comparing FOQ scores with scores on other instruments which, on theoretical grounds, should be related to it. For example, need for achievement, creativity, and knowledge of planning strategies are variables which could usefully be studied.

Alternative explanations of the empirically observed phenomena should be explored further. The standard alternative hypothesis of social desirability bias should be examined either by correlation with a social desirability scale or by comparison of responses under "fake good" and "fake bad" instructions with unconstrained responses. Also, as convergent relationships of FOQ variables to other variables become better identified, it will be increasingly possible to formulate hypotheses of divergence which represent critical tests with theoretically

interesting rival interpretations of the data, and this should be done.

Although the selection of component variables of the future activism concept was justified primarily on logical grounds, criterion-related validation methods could provide further support for the selections and an indication of their relative importance. The criterion of attendance at a future-oriented conference used in the present study represents a rather limited aspect of future activism. Other criterion groups, such as professional planners, futurists, and social activists could provide useful additional data.

Further examination of the generalizability of findings is an important need. Findings reported in Chapter IV must be considered preliminary because of several atypical aspects of the sample, such as high income and high educational levels. Administration of the instrument to low income persons (whose future is limited financially) and institutionalized people (whose future possibilities are constrained by their settings) would provide a test of the consistency and validity of the instrument at what might potentially represent the non-future active extreme. Research with samples representative of the overall population would assist in establishing the generalizability of findings and also in developing norms for scale means. Cross-cultural comparisons would be particularly informative.

Research Questions. As indicated in Chapter I, a major motivation for developing the future activism concept and the Future Orientations

Questionnaire was to provide a research tool. There is no clear demarcation between theoretically grounded research intended to validate the instrument and research using the instrument to test hypotheses. The distinction is based on the relative certainty which is attributed to the hypotheses (or comparison instrument) and the new instrument. In reality the validation and hypothesis-testing process, when successful, enhances both the credibility of the hypotheses and the validity of the instruments.

The implication is that a partially validated instrument, such as the Future Orientations Questionnaire, may be used cautiously to explore a variety of research questions. One potentially fruitful area of investigation would be a phenomenological study of the planning practices of individuals with varying scores or patterns of scores on FOQ variables. This could lead to a conceptualization of "ideal types"--differing basic approaches to thought and action directed toward the future.

Developmental aspects of the future activism component variables are worthy of study. Before beginning such research, it will be necessary to assess the age limitations of the FOQ, and perhaps to develop a young person's version of the instrument. Significant questions include: (1) Are their developmental transitions with respect to these variables, marked by shifts in scores or patterns of scores? (2) Are these shifts, if they occur, related to transitions identified by existing developmental theories? (3) Can developmental prerequisites for future activism be identified?

Questions of educational research and evaluation can also be explored using the FOQ. The instrument provides a self-report assessment of attitudes and behaviors which for some futurist educators may be important educational objectives. It therefore provides a basis for assessing the impact of educational activities. The following questions are pertinent: (1) Can FOQ scores be impacted significantly by educational "treatments"? (2) What types of educational activities have the greatest impact? (3) What is the relationship between cognitive-domain knowledge and skills and changes in the attitudinal (affective domain) aspects measured by the FOQ?

The Future Orientations Questionnaire has been shown to have considerable potential as a reliable and valid measure of important constructs. The instrument has potential application as a research tool and an educational assessment device. Further validation and application of the instrument is justified by the present findings.

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APPENDIX A

FUTURE ORIENTATIONS QUESTIONNAIRE (VERSION V)
WITH ACCOMPANYING INSTRUMENTS AS ADMINISTERED
TO ALUMNI CONFERENCE SAMPLE:

*Future Orientations Questionnaire

The Commonwealth of Massachusetts
University of Massachusetts
Amherst 01003

SCHOOL OF EDUCATION
FUTURE STUDIES PROGRAM

May 1, 1981

Dear Conference Participant:

The development of the Future Orientations Quesionnaire (attached) is the central focus of my dissertation research. This is the last round of data collection needed for me to complete my dissertation.

As a School of Ed Alumna/Alumnus, you've no doubt experienced the frustrations and satisfactions that accompany the steps in the degree process, and you'll understand how much I appreciate your willingness to participate in this study.

To achieve statistical significance, it is essential to have a high rate of return from the people who chose to take questionnaires, and that you complete all the items. You may find that breaks during the conference--such as while you wait for an event to begin--provide ample time to complete the questionnaire. If so, you could return it to the person who gave it to you, or drop it in the box which will be near the registration desk. If you don't complete it here, please plan to mail it to me by early next week. I have stamped return envelopes available on request.

Thanks again,

Duane Dale

Duane Dale

P.S. PLEASE ADDRESS A POST CARD TO YOURSELF and leave it with me. This will allow me to send you a thank you/reminder while maintaining the complete anonymity of your questionnaire.

FUTURE ORIENTATIONS QUESTIONNAIRE

Directions: This questionnaire consists of statements about the future. Please read each statement and circle one of the numbers to the right of it, to indicate how much you agree or disagree with the statement. There are no right or wrong answers; the best answers are the ones that reflect your true feelings.

It is very important that you provide answers to all of the statements.

		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1.	I have a lot of detailed plans for the future.	1	2	3	4	5
2.	Sometimes the best strategy is to "go with the flow" of things.	1	2	3	4	5
3.	I rarely think about what I'll be doing ten years from now.	1	2	3	4	5
4.	I believe that planning is necessary to make things turn out the way I want.	1	2	3	4	5
5.	The quality of life in the year 2000 will be shaped by the decisions of a small number of leaders.	1	2	3	4	5
6.	I rarely let things bother me.	1	2	3	4	5
7.	Many things which happen to me are because of chance.	1	2	3	4	5
8.	Thinking about the future makes me very anxious.	1	2	3	4	5
9.	The future will be shaped by the few people who occupy positions of power.	1	2	3	4	5
10.	Most problems will take care of themselves if you just don't fool with them.	1	2	3	4	5
11.	I spend a lot of time imagining what the future will be like for me.	1	2	3	4	5
12.	My future will be shaped, to a great extent, by the decisions of powerful people.	1	2	3	4	5
13.	I don't like to think about the future.	1	2	3	4	5
14.	I believe that luck has a lot to do with the good things that have happened to me.	1	2	3	4	5
15.	I have a clear idea of what I want to be doing with my life five years from now.	1	2	3	4	5

		Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
16.	I don't have any trouble accepting those things which I cannot change.	1	2	3	4	5
17.	I worry a lot about the future.	1	2	3	4	5
18.	The choices of politicians and business executives control the future more than those of "ordinary" people.	1	2	3	4	5
19.	Often when people fail at what they do, it's because of trying too hard.	1	2	3	4	5
20.	The future is "open" and many outcomes are possible.	1	2	3	4	5
21.	Some people seem to be very unlucky.	1	2	3	4	5
22.	Thinking about the future often makes me upset.	1	2	3	4	5
23.	I'm the kind of person who plans ahead most of the time.	1	2	3	4	5
24.	I believe that my life is willed and guided by a special force or being.	1	2	3	4	5
25.	Compared to our government and the large corporations, the public has little control over the future.	1	2	3	4	5
26.	Some people just seem destined to have problems.	1	2	3	4	5
27.	I don't think I will have much control over how my life turns out.	1	2	3	4	5
28.	I'm often very surprised by what happens to me.	1	2	3	4	5
29.	I believe that many career alternatives exist for me.	1	2	3	4	5
30.	I often think about how much the world will change during the course of my lifetime.	1	2	3	4	5
31.	Many things happen because they are fated or predetermined.	1	2	3	4	5
32.	Whether inflation can be controlled is up to individual citizens at least as much as public officials or corporate executives.	1	2	3	4	5
33.	I can't really explain why my life is the way it is.	1	2	3	4	5
34.	The average citizen can have an influence on government decisions.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
35. What happens to me in the future depends, more than anything else, on the choices I make.	1	2	3	4	5
36. I live each day as it comes without concerning myself about tomorrow.	1	2	3	4	5
37. Only a few people are in a position to do something about world peace.	1	2	3	4	5
38. I don't think that one can find reasons why life is the way it is.	1	2	3	4	5
39. I often make a list of things I need to do.	1	2	3	4	5
40. If I were going to buy a car, I would want to consider at least five different makes and models.	1	2	3	4	5
41. I don't often wonder about the future.	1	2	3	4	5
42. Thinking about the future makes me more fearful than hopeful.	1	2	3	4	5
43. I really think that life is meant to be the way it is.	1	2	3	4	5
44. The possibilities for the future are virtually unlimited.	1	2	3	4	5
45. I do believe in fate.	1	2	3	4	5
46. How the energy crisis will be resolved is up to a fairly small number of decision makers.	1	2	3	4	5
47. There's very little we can do to keep prices from going higher and higher.	1	2	3	4	5
48. Thinking about the future isn't very helpful to me.	1	2	3	4	5
49. My future will be primarily shaped by forces outside of my control.	1	2	3	4	5
50. Most things which will happen to me will be because of what I do (or do not do).	1	2	3	4	5
51. The time I spend planning really pays off.	1	2	3	4	5
52. I really don't have any idea about what my future will be like.	1	2	3	4	5
53. Most events occur by surprise with little forewarning.	1	2	3	4	5
54. I often think about what the future will be like.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
55. When people look at problems like the energy crisis they too often overlook the many solutions which are possible.	1	2	3	4	5
56. Life is very unpredictable.	1	2	3	4	5
57. We know so little about life in 1990 that it is impossible to plan that far ahead.	1	2	3	4	5
58. Time itself is the best solution to a lot of problems.	1	2	3	4	5
59. I don't think that people have much control over what happens to them.	1	2	3	4	5
60. There's very little we can do to bring about a permanent world peace.	1	2	3	4	5
61. I rarely plan how I will spend my time.	1	2	3	4	5
62. I do not believe that there is a destiny to my life.	1	2	3	4	5
63. I've got some very specific ideas about how I want to spend my life.	1	2	3	4	5
64. A lot that happens to me seems accidental.	1	2	3	4	5
65. The future is basically unpredictable.	1	2	3	4	5
66. Luck has a lot to do with the outcome of events.	1	2	3	4	5
67. I'm the kind of person who lets most things roll off my back.	1	2	3	4	5
68. Before I make an important decision, I like to consider all the options.	1	2	3	4	5
69. I prefer the practical person anytime to the person of ideas.	1	2	3	4	5
70. If you start trying to change things very much, you usually make them worse.	1	2	3	4	5
71. If something grows up after a long time, there will always be much wisdom to it.	1	2	3	4	5
72. It's better to stick by what you have than to be trying new things you don't really know about.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
73. We must respect the work of our forefathers and not think we know better than they did.	1	2	3	4	5
74. People don't really have much wisdom until they're well along in years.	1	2	3	4	5
75. No matter how we like to talk about it, political authority really comes not from us, but from some higher power.	1	2	3	4	5
76. I'd want to know that something would really work before I'd be willing to take a chance on it.	1	2	3	4	5
77. All groups can live in harmony in this country without changing the system in any way.	1	2	3	4	5

The next group of statements have a rating scale like this:

AGREE 1 2 3 4 5 6 7 DISAGREE

The meaning of the points along the scale (1,2,3,...7) is as follows:

1. Completely agree
2. Mostly agree
3. Agree more than disagree
4. Neutral
5. Disagree more than agree
6. Mostly disagree
7. Completely disagree

If you agree completely with a statement, draw a circle around number 1.
If you agree slightly with a statement, draw a circle around number 3.
If you mostly disagree with a statement, draw a circle around number 6.
In this manner you can show how much you agree or disagree with each of the statements.

Answer the way you really feel, not the way you think someone would want you to answer. This is a questionnaire, not a test. Any answer is the right answer if it is true for you.

Read each statement carefully and then draw a circle to show how much you agree or disagree with the statement. Be sure you draw a circle for each statement. Leave none of the statements blank and draw only one circle for each. You should not spend more than a few seconds answering each statement. If it is difficult for you to make up your mind, give the best answer you can and go on to the next one.

	AGREE						DISAGREE
1. A person with ability and willingness to work hard will be successful.	1	2	3	4	5	6	7
2. I can't even imagine what my life will be like in 20 years.	1	2	3	4	5	6	7

		AGREE				DISAGREE		
3.	I have too much to do.	1	2	3	4	5	6	7
4.	I find it easy to get things done without a deadline.	1	2	3	4	5	6	7
5.	My future seems dark to me.	1	2	3	4	5	6	7
6.	I always seem to be doing things at the last moment.	1	2	3	4	5	6	7
7.	I don't expect that my plans for my future will change many times during the next five years.	1	2	3	4	5	6	7
8.	I generally do not act on the spur of the moment.	1	2	3	4	5	6	7
9.	Often I am upset because I feel that I am not making the best use of my time.	1	2	3	4	5	6	7
10.	I am not afraid of getting older.	1	2	3	4	5	6	7
11.	Sometimes I feel there is nothing new to look forward to in the future.	1	2	3	4	5	6	7
12.	The future seems very clear and certain to me.	1	2	3	4	5	6	7
13.	Sometimes I feel that everything is moving on ahead and leaving me behind.	1	2	3	4	5	6	7
14.	I expect to become the kind of person I most want to be.	1	2	3	4	5	6	7
15.	I have great faith in the future.	1	2	3	4	5	6	7
16.	I don't know what kind of work I will do in the future.	1	2	3	4	5	6	7
17.	It often seems like the day will never end.	1	2	3	4	5	6	7
18.	It's really no use worrying about the future because what will be, will be.	1	2	3	4	5	6	7
19.	I need to feel rushed before I can really get going.	1	2	3	4	5	6	7
20.	It is very easy for me to visualize the kind of person I will be 10 years from now.	1	2	3	4	5	6	7
21.	When I am depressed, I often fear I may never be really happy again.	1	2	3	4	5	6	7
22.	I seldom find myself looking for ways to kill time.	1	2	3	4	5	6	7
23.	Sometimes I feel that the future is a mere repetition of the past.	1	2	3	4	5	6	7
24.	I know the kind of work I want.	1	2	3	4	5	6	7
25.	I look forward to the future with hope and enthusiasm.	1	2	3	4	5	6	7

For the next group of statements, circle a number from 1 to 3 for each statement. The meaning of the numbers is as follows:

1. Agree
2. Disagree
3. Cannot decide

As with the previous statements, be sure to circle a number for <u>each</u> statement.

		Agree	Disagree	Cannot Decide
1.	Outlining your work is a waste of time.	1	2	3
2.	My philosophy is to live for today and let tomorrow take care of itself.	1	2	3
3.	Making plans for the next few years in one's life is a sensible activity.	1	2	3
4.	Most activities don't require planning.	1	2	3
5.	Planning ahead gives one more freedom to act.	1	2	3
6.	Scheduling my day is a necessity.	1	2	3
7.	Planning a vacation makes it more enjoyable.	1	2	3
8.	Planning ahead is a bother.	1	2	3
9.	I consider that time spent making and revising plans for my future is a valuable use of time.	1	2	3
10.	My philosophy of life includes designing my future.	1	2	3
11.	Planning for future events and activities limits your freedom.	1	2	3
12.	Doing things spontaneously is more fun than participating in planned activities.	1	2	3
13.	I prefer to keep the future open and uncommitted.	1	2	3
14.	Planning ahead is fun.	1	2	3
15.	Planning for a vacation ruins it.	1	2	3
16.	Planning for the next few years of my life seems senseless.	1	2	3
17.	Planning for my future is enjoyable.	1	2	3
18.	It is really senseless for me to try to make even tentative plans.	1	2	3
19.	It is best to be concerned with the immediate.	1	2	3

		Agree	Disagree	Cannot Decide
20.	I find it unpleasant to have to make plans for my future.	1	2	3
21.	I like to plan out my activities in advance and then try to follow them.	1	2	3
22.	Deadlines are necessary to get things done.	1	2	3
23.	I prefer to do things spontaneously.	1	2	3
24.	I like to plan out my activities in advance.	1	2	3
25.	Planning ahead is important.	1	2	3
26.	I like to be in on the planning of activities.	1	2	3
27.	Making lists helps to organize one's thoughts and time.	1	2	3
28.	Planning of activities makes them more enjoyable.	1	2	3
29.	It is best to live just for today.	1	2	3
30.	Planning for activities spoils much of the fun.	1	2	3
31.	Personal expression is smothered when activities are not spontaneous.	1	2	3
32.	People should have some idea of what they'll be doing in five years.	1	2	3
33.	I like to have my daily schedule pretty well established.	1	2	3
34.	Continuous making and revising of plans is an important part of my philosophy of life.	1	2	3
35.	Much of the adventure of life lies in making plans for the future.	1	2	3
36.	A person doesn't need to know what he'll be doing in ten years.	1	2	33
37.	When I take a vacation I like to just get in the car and go with no preconceived commitments.	1	2	3
38.	Giving up pleasures in the present only means the waste of a good experience.	1	2	3
39.	Time spent planning just means that much less time to enjoy the present.	1	2	3
40.	You get more adventure out of living if you just take each day as it comes.	1	2	3

For the next group of statements, circle a number from 1 to 6 for each statement. The meaning of the numbers is as follows:

1. Strongly agree
2. Agree
3. Not sure but probably agree
4. Not sure but probably disagree
5. Disagree
6. Strongly disagree

As with the previous statements, be sure to circle a number for <u>each</u> statement.

	Strongly Agree	Agree	Not sure but probably agree	Not sure but probably disagree	Disagree	Strongly disagree
1. I would rather see a TV play about the olden times than a play that takes place now.	1	2	3	4	5	6
2. I like to have a definite schedule and stick to it.	1	2	3	4	5	6
3. There are days that go so fast it's hard to figure out where all the time went.	1	2	3	4	5	6
4. I get almost panicky when I don't have enough time.	1	2	3	4	5	6
5. I try to find time for more things than I can do.	1	2	3	4	5	6
6. Looking back at my life I don't know where all the years went.	1	2	3	4	5	6
7. If the only way I can get to an appointment is by rushing, I'd rather be late.	1	2	3	4	5	6
8. It is fun to plan for the future, even though the plans may not work out.	1	2	3	4	5	6
9. When you are waiting, time seems to just drag on and on.	1	2	3	4	5	6
10. People who always talk about the "good old days" are a nuisance.	1	2	3	4	5	6
11. I find waiting in line, even for a short time, very annoying.	1	2	3	4	5	6
12. I would be lost without a watch.	1	2	3	4	5	6
13. When one single thought lingers on my mind, I lose all sense of time.	1	2	3	4	5	6

		Strongly Agree	Agree	Not sure but probably agree	Not sure but probably disagree	Disagree	Strongly disagree
14.	The moments I feel more like my true self are when my mind is full of thoughts of my past and future.	1	2	3	4	5	6
15.	It bothers me to think how fast time goes.	1	2	3	4	5	6
16.	I envy people who can do things on the spur of the moment without a lot of planning.	1	2	3	4	5	6
17.	It is important to make good use of your time.	1	2	3	4	5	6
18.	I work at my best when I have to meet a deadline.	1	2	3	4	5	6
19.	I find it difficult to keep track of time when I can't keep my usual routine.	1	2	3	4	5	6
20.	Time spent sleeping is wasted time.	1	2	3	4	5	6
21.	It makes me a little uncomfortable to think about my future.	1	2	3	4	5	6
22.	I would rather come early and wait than be late for an appointment.	1	2	3	4	5	6
23.	I can spend hours working at a pastime, like a puzzle or a workshop project, and lose track of time.	1	2	3	4	5	6
24.	I avoid people who make demands on my time.	1	2	3	4	5	6
25.	I would like the kind of job where I could make my own schedule.	1	2	3	4	5	6
26.	When I am by myself, my thoughts often drift back to the past.	1	2	3	4	5	6
27.	I am almost never late for work or appointments.	1	2	3	4	5	6
28.	When I am on vacation I like the luxury of forgetting about time.	1	2	3	4	5	6
29.	When I was a child many more things seemed to happen in a year than happen in a year now.	1	2	3	4	5	6
30.	I try to save minutes during the day by rushing.	1	2	3	4	5	6
31.	It upsets me when I have to postpone things I planned.	1	2	3	4	5	6

	Strongly agree	Agree	Not sure but probably agree	Not sure but probably disagree	Disagree	Strongly disagree
32. I often put things off to the last minute and then rush to get them done on time.	1	2	3	4	5	6
33. It is fun to talk over younger years with old friends.	1	2	3	4	5	6
34. I hate to make any sort of definite plans weeks or months in advance.	1	2	3	4	5	6
35. I wish I would live long enough to see what the world will be like 100 years from now.	1	2	3	4	5	6
36. Twice a year, the change to and from daylight savings time throws me off and it takes a while for me to get used to it.	1	2	3	4	5	6
37. I often just feel like killing time.	1	2	3	4	5	6
38. Instants of happiness make up for months and years of drudgery.	1	2	3	4	5	6
39. It is often hard to keep track of whether something happened a week ago or a few weeks ago.	1	2	3	4	5	6

BACKGROUND INFORMATION--This information is necessary to test the questionnaires for bias of various sorts.

Sex: __ female __ male Age: ____ years

Racial or ethnic group: __ Black __ Hispanic __ White

__ Other (Specify:_____)

Marital status: __ now married __ separated __ never married
__ widowed __ divorced

Number of children: _____

Total family income from all sources, before taxes, for 1980 (check one):

__ under $5,000 __ $15,000 to $19,999 __ $30,000 to $50,000
__ $5,000 to $9,999 __ $20,000 to $24,999 __ over $50,000
__ $10,000 to $14,999 __ $25,000 to $29,999

Occupation: (check one)
__ Student (Grade level:_____)
__ Teacher (professor, instructor) (Level:_____)
(Subject(s):_____)
__ Educational administrator (Specify:_____)
__ Other (Specify:_____)

Which of these degrees have you received? Check all that apply)

__ High School diploma __ College __ Doctorate
__ Associate (Jr. College) __ Master's __ Other:_____

Have you ever attended a conference, workshop, or course on the subject of the future? (check all that apply)

__ conference __ course
__ workshop __ none of these

THANK YOU VERY MUCH FOR PARTICIPATING IN THIS STUDY.

Please return the questionnaire to the box near the conference registration desk, or mail it as soon as possible to:

Duane Dale
764 South East Street
Amherst, MA 01002

A stamped, addressed return envelope can be obtained from the person who gave you the questionnaire. Discard the cover letter before mailing to insure that one first class stamp will be sufficient.

APPENDIX B

POLITICAL INVOLVEMENT INVENTORY AS ADMINISTERED TO PSYCHOLOGY SAMPLE

POLITICAL INVOLVEMENT

The following questions can be answered by checking yes or no. If you aren't sure, please answer to the best of your recollection.

1. Have you ever written a letter or telegram to a legislator? ( ) yes ( ) no
2. Have you ever written a letter to the editor of a newspaper? ( ) yes ( ) no
3. Have you voted in every presidential election for which you were eligible to vote? ( ) yes ( ) no
4. Have you ever signed a petition? ( ) yes ( ) no
5. Have you ever circulated a petition for others to sign? ( ) yes ( ) no
6. Are you an active member of a political party (Democrats, Republicans, etc.)? ( ) yes ( ) no
7. If you aren't now, have you been in the past? ( ) yes ( ) no
8. Have you ever given money to a political party or candidate? ( ) yes ( ) no
9. Are you a member of a citizen's organization which is concerned about the environment, or housing, or schools, or some other issue of public concern? ( ) yes ( ) no
10. If you aren't now, have you been in the past? ( ) yes ( ) no
11. Have you ever given money to such an organization? ( ) yes ( ) no
12. Have you ever chosen to boycott (not buy) the products of a particular company or nation as a form of protest against the policies or practices of that company or nation? ( ) yes ( ) no
13. If so, have you ever written a letter to explain the reasons you weren't buying the product(s)? ( ) yes ( ) no
14. Have you ever participated in a rally, demonstration, vigil, picket, or other form of legal political protest? ( ) yes ( ) no
15. Have you ever participated in a protest demonstration in which you risked arrest for what you were doing? ( ) yes ( ) no
16. If so, were you ever arrested for such participation? ( ) yes ( ) no

APPENDIX C

ROTTER INTERNAL/EXTERNAL CONTROL SCALE AS ADMINISTERED TO PSYCHOLOGY RETEST SAMPLE

Directions: As before, circle a number to the right of each statement to indicate how much you agree or disagree with the statement.

I/E Items	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1. It is difficult for people to have much control over the things politicians do in office.	1	2	3	4	5
2. By taking an active part in political and social affairs the people can control world events.	1	2	3	4	5
3. It is impossible for me to believe that chance or luck plays an important role in my life.	1	2	3	4	5
4. Most of the time I can't understand why politicians behave the way they do.	1	2	3	4	5
5. How many friends you have depends on how nice a person you are.	1	2	3	4	5
6. Most students don't realize the extent to which their grades are influenced by accidental happenings.	1	2	3	4	5
7. In the long run the bad things that happen to us are balanced by the good ones.	1	2	3	4	5
8. Without the right breaks one cannot be an effective leader.	1	2	3	4	5
9. This world is run by the few people in power, and there is not much the little guy can do about it.	1	2	3	4	5
10. In my case getting what I want has little or nothing to do with luck.	1	2	3	4	5
11. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.	1	2	3	4	5
12. Sometimes I feel that I don't have enough control over the direction my life is taking.	1	2	3	4	5
13. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.	1	2	3	4	5
14. Sometimes I can't understand how teachers arrive at the grades they give.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
15. Many times exam questions tend to be so unrelated to course work that studying is really useless.	1	2	3	4	5
16. Who gets to be the boss often depends on who was lucky enough to be in the right place first.	1	2	3	4	5
17. There will always be wars, no matter how hard people try to prevent them.	1	2	3	4	5
18. No matter how hard you try some people just don't like you.					
19. When I make plans, I am almost certain that I can make them work.	1	2	3	4	5
20. People are lonely because they don't try to be friendly.	1	2	3	4	5
21. The idea that teachers are unfair to students is nonsense.	1	2	3	4	5
22. With enough effort we can wipe out political corruption.	1	2	3	4	5
23. It is hard to know whether or not a person really likes you.	1	2	3	4	5
24. Many times we might just as well decide what to do by flipping a coin.	1	2	3	4	5
25. People's misfortunes result from the mistakes they make.	1	2	3	4	5
26. In the long run people get the respect they deserve in this world.	1	2	3	4	5
27. Getting a good job depends mainly on being in the right place at the right time.	1	2	3	4	5
28. There's not much use in trying too hard to please people; if they like you, they like you.	1	2	3	4	5
29. In the long run the people are responsible for bad government on a national as well as on a local level.	1	2	3	4	5
30. There really is no such thing as "luck."	1	2	3	4	5
31. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.	1	2	3	4	5
32. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
33. There is a direct connection between how hard I study and the grades I get.	1	2	3	4	5
34. One of the major reasons why we have wars is because people don't take enough interest in politics.	1	2	3	4	5
35. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.	1	2	3	4	5
36. Capable people who fail to become leaders have not taken advantage of their opportunities.	1	2	3	4	5
37. Becoming a success is a matter of hard work; luck has little or nothing to do with it.	1	2	3	4	5
38. The average citizen can have an influence in government decisions.	1	2	3	4	5
39. Many times I feel that I have little influence over the things that happen to me.	1	2	3	4	5
40. Most people don't realize the extent to which their lives are controlled by accidental happenings.	1	2	3	4	5
41. People who can't get others to like them don't understand how to get along with others.	1	2	3	4	5
42. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.	1	2	3	4	5
43. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.	1	2	3	4	5
44. I have often found that what is going to happen will happen.	1	2	3	4	5
45. Many of the unhappy things in people's lives are partly due to bad luck.	1	2	3	4	5
46. What happens to me is my own doing.	1	2	3	4	5

APPENDIX D

TAYLOR MANIFEST ANXIETY SCALE AS ADMINISTERED TO PSYCHOLOGY RETEST SAMPLE

TMAS Scale

Directions: You are to read each of the statements and decide whether it is TRUE or FALSE as it applies to you. Circle the letter T to indicate TRUE or the letter F to indicate FALSE.

1. T F I do not tire quickly.
2. T F I am troubled by attacks of nausea.
3. T F I believe I am no more nervous than most others.
4. T F I have very few headaches.
5. T F I work under a great deal of tension.
6. T F I cannot keep my mind on one thing.
7. T F I worry over money and business.
8. T F I frequently notice my hand shakes when I try to do something.
9. T F I blush no more often than others.
10. T F I have diarrhea once a month or more.
11. T F I worry quite a bit over possible misfortunes.
12. T F I practically never blush.
13. T F I am often afraid that I am going to blush.
14. T F I have nightmares every few nights.
15. T F My hands and feet are usually warm enough.
16. T F I sweat very easily on cool days.
17. T F Sometimes when embarrassed, I break out in a sweat which annoys me greatly.
18. T F I hardly ever notice my heart pounding and I am seldom short of breath.
19. T F I feel hungry almost all the time.
20. T F I am very seldom troubled by constipation.
21. T F I have a great deal of stomach trouble.
22. T F I have had periods in which I lost sleep over worry.
23. T F My sleep is fitful and disturbed.
24. T F I dream frequently about things that are best kept to myself.
25. T F I am easily embarrassed.
26. T F I am more sensitive than most other people.
27. T F I frequently find myself worrying about something.

28. T F I wish I could be as happy as others seem to be.
29. T F I am usually calm and not easily upset.
30. T F I cry easily.
31. T F I feel anxiety about something or someone almost all the time.
32. T F I am happy most of the time.
33. T F It makes me nervous to have to wait.
34. T F I have periods of such great restlessness that I cannot sit long in a chair.
35. T F Sometimes I become so excited that I find it hard to get to sleep.
36. T F I have sometimes felt that difficulties were piling up so high that I could not overcome them.
37. T F I must admit that I have at times been worried beyond reason over something that really did not matter.
38. T F I have very few fears compared to my friends.
39. T F I have been afraid of things or people that I know could not hurt me.
40. T F I certainly feel useless at times.
41. T F I find it hard to keep my mind on a task or job.
42. T F I am unusually self-conscious.
43. T F I am inclined to take things hard.
44. T F I am a high-strung person.
45. T F Life is a strain for me much of the time.
46. T F At times I think I am no good at all.
47. T F I am certainly lacking in self-confidence.
48. T F I sometimes feel that I am about to go to pieces.
49. T F I shrink from facing a crisis or difficulty.
50. T F I am entirely self-confident.

Have you answered all the items?
Thanks for your participation in this study!

APPENDIX E

SAMPLE CHARACTERISTICS: PSYCHOLOGY, FUTURES CONFERENCE, AND ALUMNI CONFERENCE SAMPLES

Variable/value	Psychology	Futures Conference	Alumni Conference
N of subjects	246	66	40
AGE mean	-	41.98	38.65
standard deviation	-	8.94	9.56
SEX % female	31.5%	46.4%	42.1%
RACE % white	-	-	80%
% black			15%
% Hispanic			5%
MARITAL STATUS			
% Married	-	57%	54%
% Separated		2%	6%
% Divorced		17%	21%
% Widowed		4%	0%
% Never Married		21%	21%
PARENTHOOD			
% Parents	-	-	55%
FAMILY INCOME			
Median category	$15-20,000	$25-30,000	$20-25,000
OCCUPATION			
% Student	100%	11%	11%
% Teachers		55%	26%
% Ed. Admin.		18%	26%
% Other		16%	37%
EDUCATION (Highest Degree:) Doctorate		35%	39%
Master's		35%	42%
Bachelor's		11%	8%
Associate		3%	3%
High School	100% (?)	1%	6%
FUTURE CONFERENCE PARTICIPATION	no data	100% (previous conference: 52%)	21% conference 12% workshop 12% course 65% none of above

APPENDIX F

INTERCORRELATIONS OF SCALES USED IN INTERTEST METHODS OF VALIDATION, PSYCHOLOGY RETEST SAMPLE

Scale	Manifest Anxiety	Political Involvement	
Locus of Control	.52***(40)	-.13	(41)
Manifest Anxiety	-	-.17	(41)
Political Involvement		-	

APPENDIX G

INTERCORRELATIONS OF SCALES USED IN INTERTEST METHODS OF VALIDATION, ALUMNI CONFERENCE SAMPLE

	Time Anxiety		Time Submissive.		Time Possessive.		Time Flexibility	
Time Anxiety	-							
Time Submissiveness	.12	(37)	-					
Time Possessiveness	.15	(35)	-.23	(36)	-			
Time Flexibility	.12	(37)	-.09	(40)	.02	(36)	-	
FTPI	.43**	(36)	.21	(39)	-.12	(35)	.19	(39)
Articulation/ Flow of Time	-.55***	(37)	.25	(40)	-.14	(36)	-.00	(40)
Optimistic Wntarcy	-.17	(37)	.23	(40)	-.15	(36)	.26	(40)
Future Structure	-.16	(37)	.07	(40)	-.07	(36)	.20	(40)
Time Mindedness	-.21	(37)	.51***	(40)	-.08	(36)	.16	(40)
Rejection of Fatalism	-.51***	(36)	.05	(39)	-.01	(35)	.08	(39)
Planning Intentions	-.12	(35)	.32*	(37)	.11	(35)	.08	(37)
Conservatism	.43**	(35)	.28*	(38)	-.41**	(34)	-.02	(39)

* $p<.05$ **$p<.01$ *** $p< .002$

Cell contents: Pearson Correlation (N of Subjects)

APPENDIX G (continued)

	FTPI		Articulation with the flow of time		Optimistic Mastery		Future Structure	
Time Anxiety	-.43**	(36)	-.55***	(37)	-.17	(37)	-.16	(37)
Time Submissiveness	.21	(39)	.25	(40)	.23	(40)	.17	(40)
Time Possessiveness	-.12	(35)	-.14	(36)	-.15	(36)	-.07	(36)
Time Flexibility	.19	(39)	-.00	(40)	.26	(40)	.20	(40)
FTPI	-							
Articulation/ Flow of Time	.86***(39)		-					
Optimistic Mastery	.83***(39)		.66***	(40)	-			
Future Structure	.75***(39)		.44**	(40)	.51***(40)		-	
Time Mindedness	.53***(39)		.63***	(40)	.38**	(40)	.20	(40)
Rejection of Fatalism	.75***(39)		.63***	(39)	.58***(39)		.32*	(39)
Planning Intentions	.28*	(36)	.16	(37)	.21	(37)	.34*	(37)
Conservatism	-.18	(38)	-.03	(38)	-.13	(38)	.10	(38)

* p<.05 **p<.01 *** p< .002

Cell contents: Pearson Correlation (N of Subjects)

APPENDIX G (continued)

	Time Mindedness		Rejection of Fatalism		Planning Intentions		Conservatism	
Time Anxiety	-.21	(37)	-.51***	(36)	-.12	(35)	.43**	(35)
Time Submissiveness	.51***	(40)	.05	(39)	.32*	(37)	.28*	(38)
Time Possessiveness	-.08	(36)	-.01	(35)	.11	(35)	-.41**	(34)
Time Flexibility	.16	(40)	.08	(39)	.08	(37)	-.02	(39)
FTPI								
Articulation/ Flow of Time								
Optimistic Mastery								
Future Structure								
Time Mindedness	-							
Rejection of Fatalism	.28*	(39)	-					
Planning Intentions	.29*	(37)	.16	(36)	-		-.18	(36)
Conservatism	.10	(38)	-.18	(37)	-.18	(36)	-	

* $p<.05$ **$p<.01$ *** $p< .002$

Cell contents: Pearson Correlation (N of Subjects)

APENDIX H

SCORING PROCEDURE FOR THE FUTURE ORIENTATIONS QUESTIONNAIRE

Scale	Items Score in Original Direction	Items Scored in Reverse Direction (1→5, 2→4, etc)	Number of Items*	Meaning of Low Scores
Future Orientation	54,11,30	41,3,48,13	7	High Future Orientation
Planfulness	23,51,15,4, 63,1,39	61,52	9	High Planfulness
Option Seeking	29,44,20,68		4	High Option Seeking
Internal/ Societal	34	47,60	3	High Internal/Societal
Internal/ Personal	35,50	49,27	4	High Internal/Personal
Others Control	-	9,25,12,37,5,46	6	Low Belief that Powerful Others Control
Luck	-	66,7,14,64,21	5	Low Belief in Luck
Fate	62	31,43,24,45	5	Low Belief in Fate
Random	-	56,65,38,33,53,28,57	7	Low Belief in Random Forces
Acceptance	-	2,10,19,58	4	Low Acceptance
Concern	-	36,6,67,16	4	High Concern
Future Anxiety	22,17,8,42		4	High Anxiety

*In order to produce scale scores with the same range as individual items (1 to 5), the sum of item scores for each scale is divided by the numbr of items in the scale is divided by the number of items in the scale. Alternatively, missing data can be accommodated by dividing by the number of items actually completed by a particular subject; this procedure reduces the reliability and validity of scale socres, and should not be used when there is a large amount of missing data.